



هيئة أبوظبي للزراعة والسلامة الغذائية
ABU DHABI AGRICULTURE AND FOOD
SAFETY AUTHORITY



AGRICULTURE AND FOOD SAFETY POLICY 2012

April 2012

Agriculture and Food Safety Policy

Contents	Pages
Glossary Of Terms	7
List Of Abbreviations	17
Executive Summary	18
1. Introduction	22
1.1. Purpose and Scope	22
1.2. Whole of 'Food Chain' Agency	23
1.3. Policy Development Approach	25
1.4. Stakeholders	27
1.5. Assumptions and Risks	29
2. Policy Context	30
2.1. Policy Intent	30
2.2. Policy Drivers	32
2.2.1. The General Policy Drivers:	32
2.2.2. The Drivers Specific to the Agriculture Sector are Identified as the Following:	33
2.2.3. The Drivers Specific to Food Safety and Suitability are Identified as the Following:	33
2.3. Current Policy Environment	34
2.3.1. Policy – Strategy Framework	34
2.3.2. Legislative Responsibilities	35
2.4. Overview of the Current Agriculture and Food Sector Profiles	36
2.5. Current Agriculture Issues	39
2.5.1. Generic Agriculture Issues	39
2.5.2. Agriculture Production, Plant Protection and Animal Health Issues	39
2.6. Food Safety and Suitability Issues	40
2.6.1. Generic Food Safety and Suitability Issues	40
2.6.2. Imports and Trade	41
2.6.3. New Technology	41
2.6.4. Consumer Growth and Demand	41
3. Overarching agriculture and Food Safety & Suitability Policy Principles	41

4. General Policies For Agriculture and Food Safety	44
4.1. General Policy 1: Integrated Farm to Fork 'Food Chain' Approach	46
4.2. General Policy 2: Integrated Risk Management Framework	47
4.3. General Policy 3: Abu Dhabi Regulatory Model	51
4.4. General Policy 4: Good Operating Practice and HACCP Principles	54
4.5. General Policy 5: Credibility and Capability	56
4.6. General Policy 6: Transparency through Consultation & Communication	57
4.6.1. Consultation	58
4.6.2. Communication and Informing Consumers and Stakeholders	58
4.7. General Policy 7: Consistency with WTO SPS and TBT Agreements	59
4.7.1. Sanitary & Phytosanitary (SPS) Agreement	59
4.7.2. Alignment with International Standards	60
4.7.3. Building Relationships with Counterparts	60
4.8. General Policy 8: Harmonisation across the UAE	61
4.9. General Policy 9: Performance Management	62
4.10. General Policy 10: Traceability	64
4.11. General Policy 11: Trade in Agriculture and Food Products (Imports and Exports)	66
5. Agriculture Policy Framework and Policies	69
5.1. Introduction	69
5.2. Agriculture Policy Framework	70
5.2.1. Agriculture Production	72
5.2.1.1. P1 - Agricultural Land Use	73
5.2.1.2. P2 - Agricultural Water Use	77
5.2.1.3. P3 - Production Choices	80
5.2.1.4. P4 - Economic Sustainability	85
5.2.2. Agriculture Protection	87
5.2.2.1. P5 – On-Farm Prevention Measures	88
5.2.2.2. P6 – Pest and Disease Control	89
5.2.2.3. P7 - Regulated Areas for Pest and Disease Management	91
5.2.2.4. P8 – Emergency Preparedness and Response	93
5.2.2.5. P9 - Preservation of Valuable Agricultural Species	96

5.2.3. Common Agricultural Policies	97
5.2.3.1. P10 – Research and Development	98
5.2.3.2. P11 – Social Support	102
5.2.3.3. P12 - Agriculture Compounds	104
5.2.3.4. P13 - Animal Welfare	107
5.2.3.5. P14 - Competencies and on Farm Capabilities	109
5.2.3.6. P15 – Compliance, Offences, Penalties and Enforcement	112
6. Food Safety & Suitability Policy Framework and Policies	113
6.1. Introduction	114
6.2. Food Safety Policy Framework	116
6.2.1. P1 - Accountabilities and Role of Key Players	117
6.2.2. P2 - Licensing, Registration, Accreditation, Recognition, Approvals	120
6.2.3. P3 – Assessing Compliance – Verification (Inspection During Transition)	123
6.2.4. P4 – Labelling and Composition	127
6.2.5. P5 – Halal	130
6.2.6. P6 – Tools	131
6.2.7. P7 – Competencies	132
6.2.8. P8 – Incident Response (Recall and Withdrawal)	134
6.2.9. P9 - Powers of Officers	137
6.2.10. P10 – Compliance, Offences, Penalties and Enforcement	139
6.2.11. P11 – Consumer Awareness and Food Sector Education	141

Legend Of Diagrams

Diagram 1: Functions Covered by ADFCA	23
Diagram 2: Potential Benefits Associated with a Cross- Sectorial Approach to Biosecurity	24
Diagram 3: Current Policy Process	26
Diagram 4: Policy Development Process in the Future	27
Diagram 5: Key Stakeholders	28
Diagram 6: Levels of Engagement of Particular Groups/Agencies	29
Diagram 7: ADFCA Strategy Map 2011 - 2015	31
Diagram 8: Government Inter-Relationships and Policy Framework	35
Diagram 9: Legislative Responsibilities	36

Diagram 10: Policy Principles	42
Diagram 11: General Policies	45
Diagram 12: Food Chain	47
Diagram 13: Integrated Risk Management Framework	49
Diagram 14: Regulatory Model	52
Diagram 15: Good Operating Practice	55
Diagram 16: Policy Consultation and Communication	57
Diagram 17: Harmonisation In the UAE	62
Diagram 18: Key Interfaces For Import/ Export Assurances	68
Diagram 19: Agriculture Policy Framework	72
Diagram 20: Agricultural Land Use Policy Coverage	74
Diagram 21: Land Use Impact Assessment	75
Diagram 22: Agricultural water Use Policy Coverage	78
Diagram 23: Water Use Impact Assessment	79
Diagram 24: Factors in Production Choice Decisions	81
Diagram 25: Principles of Sustainable Production	86
Diagram 26: Key Methods/Techniques for Managing Pests and Diseases	90
Diagram 27: ADFCA's Key Considerations in the establishment of regulated pest & disease control areas	93
Diagram 28: Key Components of Effective Emergency Response	94
Diagram 29: Integrated Risk Management Framework as Applied To Valuable Agricultural Species	97
Diagram 30: Steps in the Development of an R&D Strategy for Agriculture	99
Diagram 31: Outcomes of Social Support	103
Diagram 32: Factors in Food Safety Policy Decisions	115
Diagram 33: Food Policy Framework	117
Diagram 34: Accountability Pathway	118
Diagram 35: Licensing, Registration, Accreditation, Recognition and Approvals Symbols	121
Diagram 36: Assessing Compliance Verification Model	124
Diagram 37: Verification in Transition	126
Diagram 38: Tools for Food Sector	131
Diagram 39: Sources of Information Concerning Food Incidents	135
Diagram 40: Key Steps in Building Community/Business Commitment	142

Vision

An internationally recognized food and agriculture organization that contributes to the well-being of the community

Mission

To develop a sustainable agriculture and food sector that ensures the delivery of safe food to the public and protects the health of animals and plants while promoting sound environmental and food practices through cohesive and effective policies and regulations, quality standards, research and awareness.

Glossary of Terms

Term	Description
Acceptable Level of Protection (ALOP)	The level of protection deemed appropriate by the country establishing a sanitary, zoo-sanitary or phyto-sanitary measure to protect human, animal or plant life or health within its territory. (This concept may be otherwise referred to as the “acceptable level of risk”). (Source: Codex adapted)
Accountability	Obligation of an individual, firm, or institution to acknowledge and account for its activities and decisions, accept responsibility for them, and to disclose, report or explain the results in a transparent manner. (Source: Oxford Dictionary and governance theory)
Accreditation	The procedure by which the regulator formally recognises the competence to provide for a particular function against an international standard and additional secondary criteria/standards (if any) set by the regulator, and in compliance with ISO/IEC 17011 Conformity Assessment – General Requirements for Accreditation Bodies Accrediting Conformity Assessment Bodies (Source: Codex adapted)
Adulterated agriculture compound	An Agriculture Compound that has been made impure by adding extraneous, improper or inferior ingredients, so that its composition no longer complies with the original registered formulation (Source: Various)
Adulterated food	Food where certain materials are added to its original ingredients for the purpose of reducing its quality and nutritional value or the food where some of its nutrient contents have been removed without disclosing this in its food label. (Source: Abu Dhabi Emirate Food Law No. 2/2008)
Agriculture compounds	Agriculture Compounds are an input in to agricultural production. An Agriculture Compound is any substance, mixture of substances or biological compound used or intended for use in the direct management of plants and animals, or applied to the land, place or water on or in which plants and animals are managed. Agriculture compounds include pesticides (including biopesticides, chemical pesticides and insect growth regulators), veterinary and other animal drugs (including vaccines and hormones), biological control agents, fertilizers, feeds and pheromones. (Source: Various)
Animal	Animal includes mammals, birds, fish and bees (Source: FAO)
Approval	The action of officially agreeing to something or accepting something as satisfactory. (Source: NZFSA)

Term	Description
Area of low pest prevalence	An area, whether all of a country, part of a country, or all or parts of several countries, as identified by the competent authorities, in which a specific pest occurs at low levels and which is subject to effective surveillance, control or eradication measures (Source: ISPM No. 22)
As far as possible	Applying resources to the management of risks to the best of the available technology and capability but aware that it may not fully achieve the intended purpose. (Source: NZFSA)
As low as reasonably achievable	An expression used in risk reduction which requires a test of technical feasibility and current knowledge to be taken into account, including the cost-benefit of an intervention (Source: Safety and Health Protection, UK).
Biological control agent	A natural enemy, antagonist or competitor, or other organism, used for pest or disease control. (Source: Based on ISPM No. 5 definition)
Biosecurity	A strategic and integrated approach to analysing and managing relevant risks to human, animal and plant life and health and associated risks to the environment. (Source: FAO)
Business Operator/ Person in charge	The natural or legal person(s) responsible for ensuring that the requirements of food law are met within the food business under their control. The owner or other person in control of the business. The person who has overall “charge” of the food business, e.g. manager or owner, or food handler supervisor. (Source: Abu Dhabi Emirate Food Law No. 2/2008 expanded)
Code of practice	An advisory document reflecting acceptable industry practices, and providing information and guidance on ways of meeting regulatory requirements that are appropriate to the purpose and scope of the code. (Source: Common usage)
Codex Alimentarius (or Codex)	The joint Food Standards Program of the Food and Agriculture Organization of the United Nations (FAO) and the World Health Organization (WHO) in which food standards, guidelines and related texts such as codes of practice are developed with the purpose of protecting health of consumers and ensuring fair trade practices in the food trade. (Source: Codex)
Communication	The processes involved in (1) providing clear, accurate and timely information about risks to human, animal and plant life and health and the work of ADFCA to consumers, stakeholders and the media and (2) seeking information or advice prior to making a decision – with the aim of soliciting the views of those who might be materially affected and considering those views so that informed decisions can be made. (Source: Common usage adapted for ADFCA)

Term	Description
Compartment	An animal subpopulation contained in one or more establishments under a common biosecurity management system with a distinct health status with respect to a specific disease or specific diseases for which required surveillance, control and biosecurity measures have been applied for the purpose of international trade (Source: OIE)
Compliance	Conforming to a rule, or obedience to a request, regulatory requirement, specification, policy, standard or law; meeting requirements on a consistent basis. (Source: Oxford Dictionary adapted)
Concept	An abstract idea or a mental symbol sometimes defined as a «unit of knowledge» built from other units which act as a concept's characteristics. A concept is typically associated with a corresponding representation in a language, diagrammatically or symbolically. (Source: Various)
Contaminants	Any substance not intentionally added to food, which is present in such food as a result of the production (including operations carried out in crop husbandry, animal husbandry and agriculture compounds including veterinary drugs), manufacture, processing, preparation, treatment, packing, packaging, transport or holding of such food or as a result of environmental contamination. (Source: Based on ADFCA Regulation No. 1/2008)
Control (of a disease or pest)	Suppression, containment or eradication of a disease or pest population (Source: Based on ISPM No. 5 definition)
Disease	The clinical and/or pathological manifestation of infection (Source: OIE)
Equivalent	Capable of meeting the same objectives, in different systems. (Source: ADFCA Regulation No. 6/2010). (Note the international definition of "Equivalence" is contained in Article 4 of the WTO SPS Agreement).
Emirate	The Emirate of Abu Dhabi. (Source: Abu Dhabi Food Law No. 2/2008)
Enforcement	The use of regulatory tools to achieve compliance. (Source: Common usage)
Establishment	Any building(s) or areas(s), fixed or mobile, in which food is handled at any stage of food chain. (Source: Abu Dhabi Emirate Food Law No. 2/2008)
Extension (in agriculture)	Services or activities provided by government, other organisations and individuals to communicate to the rural sector and deliver on-farm training, up-take of research and development and farm support generally aimed at effecting change in rural communities and promoting rural development. (Source: Various)
Farm	Includes agricultural production units and Eizab (farms with special characteristics related to the nature/traditions of livestock breeding. (Source: Based in part on Regulation No. 4 of 2010)

Term	Description
Farm produce	Includes live animals and plants and their products.
Farm worker	Person working on the farm
Farmer	Owner of the farm and/or the farm operator who is responsible for the day-to-day operations on the farm. (Source: Various)
Feed	Any substance or product, including additives, whether processed, partially processed or unprocessed, intended to be used as feed or concentrate or supplementary to animals. (Source: ADFCA Regulation No. 3/2008)
Feed business	Any building(s) or areas(s), fixed or mobile, carrying out any operation of production, manufacture, processing, storage, transport or distribution of feed. (Source: ADFCA Regulation No. 3/2008)
Food	Any substance, whether processed, semi-processed or raw, which is intended for human consumption, inter-alia drink, chewing gum and any substance which has been used in the manufacture, preparation or treatment of "food" but does not include cosmetics or tobacco or substances used only as drugs. (Source: Abu Dhabi Emirate Food Law No. 2/2008)
Food business operators	The natural or legal person(s) responsible for ensuring that the requirements of food law are met within the food business under their control. (Source: Abu Dhabi Emirate Food Law No. 2/2008)
Food chain	This includes all stages of food production (including feeds/fertilisers and other inputs into production), processing, preparation, manufacturing, packing, transporting, storing, distributing, displaying, servicing and selling it to consumers. (Source: Abu Dhabi Emirate Food Law No. 2/2008 adapted)
Food/Feed management system	A holistic management system of control measures that manages food safety and suitability in a food/feed business. It consists of systematic scientific based methods and techniques that proactively identify hazards, further evaluating them, applying them and enforcing appropriate measures to protect food. (Source: Abu Dhabi Emirate Food Law No. 2/2008 expanded)
Food handler	Any person handling food directly or indirectly. (Source: Abu Dhabi Emirate Food Law No. 2/2008)
Food hygiene	All conditions and measures necessary to control hazards and suitability characteristics to an appropriate level thereby ensuring the safety and suitability of food at all stages of the food chain. (Source: Codex and ADFCA Regulation No. 6/2010 adapted)

Term	Description
Food incident	<p>The circumstances surrounding the identification of a hazard which poses a risk to health and can be considered as (but not exclusively):</p> <p>An event which had potentially risk to the public resulting from the consumption of food.</p> <p>The identification of contaminated food, that if consumed may lead to illness.</p> <p>The identification of serious human illness that may be linked to contaminated food.</p> <p>The identification of unhygienic practices in a food business of such a degree as to present an immediate danger to consumers' health.</p> <p>The identification of irregular or illegal practices in any food business or in the distribution network that could pose a risk to consumers' health.</p> <p>Biological or chemical contamination resulting from deliberate tampering or a terrorist event.</p>
Food/Feed Management System Specialist	A person with specialised knowledge able to develop a food safety and suitability management system and/or manage specific high risk sectors. This could be (depending on the role), a quality assurance person, a technical specialist or an external consultancy firm. (Source: Various)
Food Officer/ Officer in Charge	ADFCA employee who has the capacity of judicial powers and empowered to undertake a range of functions including inspection, verification and enforcement. (Source: Abu Dhabi Emirate Food Law No. 2/2008 expanded)
Food safety	The sum of health measures and procedures undertaken in order to protect the public health to an appropriate level against risks from consuming such food. (Source: Abu Dhabi Emirate Food Law No. 2/2008 expanded)
Genetic resources	<p>(a) For animals, genetic resources are those animal species or sub-populations that are or may be used for food and agriculture including their stored genetic material (semen, oocytes, embryos, somatic cells, DNA)</p> <p>(b) For plants, genetic resources mean any material of plant origin, including reproductive and vegetative propagating material, containing functional units of heredity, of actual or potential value for food and agriculture.</p> <p>(Source: FAO Commission on Genetic Resources for Food and Agriculture)</p>

Term	Description
Good Operating Practice	All aspects of good practice relevant to food/feed, including any process and the surrounding environment; intended to cover Good Agricultural Practice, Good Veterinary Practice, Good Hygienic Practice and Good Manufacturing Practice. (Source: NZFSA)
Halal food	Food permitted under the Islamic laws, where it does not consist of, or contain, anything that is considered to be unlawful according to Islamic laws. It should not have been prepared, processed, transported or stored using any appliance or facility that was not free from anything unlawful according to Islamic laws and has not in the course of preparation, processing, transportation or storage been in direct contact with any food that fails to satisfy as above. (Source: ADFCA Regulation No. 6/2010)
Handling	Any operation in the preparation, processing cooking, packaging, storage, transportation distribution, selling and service of food or donating for the purpose of human consumption. (Source: Abu Dhabi Emirate Food Law No. 2/2008)
Hazard	A biological, chemical or physical agent in, or condition of, food with the potential to cause an adverse health effect ¹ . (Source: Codex and Abu Dhabi Emirate Food Law No. 2/2008)
Hazard Analysis and Critical Control Point (HACCP)	A 'process' developed internationally that is additional or supplementary to Good Practice with a focus on identification, evaluation, and control of hazards which can be significant for food safety. (Source: Codex adapted)
HACCP based system	System that is consistent with the seven principles of the Codex Alimentarius Hazard Analysis and Critical Control Point (HACCP) but does not necessarily conform to the Codex Alimentarius layout or steps of the Guidelines for HACCP application. (Source: ADFCA Regulation No. 6/2010)
Hydroponics	Method of growing plants using mineral nutrient solutions, in water, without soil (Source: various)
Inputs	Requirements for production (at any point in the food chain) such as capital goods, human resources, raw materials (e.g. agriculture compounds, genetic resources and food ingredients), infrastructure (e.g. buildings and transport) and other resources (e.g. land, power and water) (Source: Various)
Inspection	The examination of farms, premises and food operations (concerning food, raw materials, processing and distribution, including in-process and finished product testing), in order to be satisfied that they meet the legal requirements. (Source: Codex and ADFCA Regulation No. 5/ 2010)

¹ Procedural Manual (Codex Alimentarius Commission, FAO, 2010)

Term	Description
International standards	The standards, guidelines and recommendations for: Food safety established by the Codex Alimentarius Commission Animal health and zoonoses developed under the auspices of the World Organization for Animal Health (OIE). Plant health developed under the auspices of the Commission on Phytosanitary Measures (CPM) under the International Plant Protection Convention (IPPC) and including International Standard for Phytosanitary Measures or ISPMs. Matters not covered by the above organisations as promulgated by other relevant organisations open for membership to all Members as identified by the SPS Committee. (Source: Based on the WTO SPS Agreement)
Integrated Risk Management Framework	Step based approach to dealing with issues and managing risk within the food chain – how risks will be identified, analysed, controlled, monitored and reviewed. Benefits include contribution to consistency, proportionality and performance measurement.
Licensee	A person (private or public natural or corporate) with a valid licence for operating a business related to food and its handling. (Source: Abu Dhabi Emirate Food Law No. 2/2008 adapted)
Licensing	Official process whereby the regulator issues prior approval for food business can operate on the commercial level. (Source: Common usage)
Pest	Any species, strain or biotype of plant, animal (including insects and mites) or pathogenic agent injurious to plants or plant products or animals. (Source: Based on ISPM No. 5 definition)
Pest or disease free area	An area in which a specific pest or disease does not occur as demonstrated by scientific evidence and in which, where appropriate, this condition is being officially maintained. (Source: Based on ISPM No. 5 and OIE)
Plants	Plants and parts thereof, including seeds. For the purposes of this policy document, edible fungi is included in this definition to be treated the same as a plant. (Source: Based on ISPM No. 5)
Principle	A basic truth or law or assumption or an explanation of fundamental reasons that can be used as a basis for reasoning or conduct. (Source: Oxford Dictionary adapted)
Recognition	Provided by the regulator for agencies and individuals to undertake a particular function, against criteria and standards set by the regulator. (Source: NZFSA)
Registration	The act of registering a person, place, system, product or thing. (Source: Based on Oxford Dictionary)
Regulator	The Abu Dhabi Food Control Authority on the Emirate level and the Federal authorities on the UAE level

Term	Description
Regulatory program	The overarching program in Abu Dhabi for which ADFCA is accountable, and within which decisions on the type of involvement (regulatory and non-regulatory) covering animal, plant and public health are made. The actualisation of the vision, strategy and mandate. (Source: Various)
Requirements	The mandatory standards set and issued by ADFCA which define the technical decisions and regulations. These must be met by food or feed business operators, and other related businesses or persons. (Source: Based on NZFSA)
Responsibility	Duty or obligation to satisfactorily perform or complete a task (assigned by someone, or created by one's own promise or circumstances) that one must fulfil, and which has a consequent penalty for failure. (Source: Various)
Risk	A function of the probability of an adverse effect and the severity of that effect, consequential to a hazard(s) in food and feed ² or to productive capacity. (Source: Based on Codex and Abu Dhabi Emirate Food Law No. 2/2008)
Risk analysis	Identifying risks in food or to productive capacity on a scientific basis and developing the necessary measures to manage them. This consists of three components: risk assessment, risk management and risk communication. (Source: Based on Codex and Abu Dhabi Emirate Food Law No. 2/2008)
Risk appetite	In management this is the amount of risk which is judged to be tolerable and justifiable. In relation to food systems, risk appetite is the gap between zero risk and what risk the regulator will accept given that some risk is inevitable in the food chain. A high risk appetite occurs when the gap is greater while a low risk appetite occurs when the gap is reduced.
Risk assessment	The evaluation of the likelihood and severity of adverse effects on productive capacity or health arising from hazards. In relation to food it is a scientifically based process consisting of the following steps: (i) hazard identification, (ii) hazard characterisation, (iii) exposure assessment, and (iv) risk characterisation. (Source: Based on Codex and ADFCA Code of practice No. 2/2009)
Risk based approach	Development of management programs to address identified risks to productive capacity or to consumers. (Source: Based on NZFSA)
Risk communication	The interactive exchange of information and opinions throughout the risk analysis process concerning risk, risk-related factors and risk perceptions, among risk assessors, risk managers, consumers, industry, the academic community and other interested parties, including the explanation of risk assessment findings and the basis of risk management decisions.. (Source: Based on WHO and ADFCA Code of practice No. 2/2009)

²Procedural Manual (Codex Alimentarius Commission, FAO, 2010)

Term	Description
Risk management	The process, distinct from risk assessment, of weighing policy alternatives, in consultation with all interested parties, considering risk assessment and other factors relevant for productive capacity or health protection of consumers and for the promotion of fair trade practices, and, if needed, selecting appropriate prevention and control options. (Source: Based on Codex and ADFCA Code of practice No. 2/2009)
Safe food	Food that has been produced by applying all food safety requirements (or their equivalent) appropriate to its intended end use and covers food produced/processed within Abu Dhabi, the UAE or imported.
Social support	Programs to encourage sustainable agricultural practices and production. (Source: Various)
Seamless	Without legislative or operational duplication or gaps in the regulatory program administered by ADFCA.
Suitability	The condition in which food is acceptable for human consumption according to its intended use including specific characteristics, composition requirements (non-food safety) and labelling for consumer information purposes that are not in themselves scientifically related to food safety. Suitability covers Halal food. (Source: Abu Dhabi Emirate Food Law No. 2/2008 expanded)
Sustainable Agriculture	An economically and environmentally sound, and socially responsible system, of agricultural production. (Source: Based on ADFCA Strategy)
Verification³	The regular monitoring activities carried out to ensure compliance with requirements for example, as stated in the food safety/suitability management systems. In this example, the monitoring may include a sample 'inspection' of premises and/or food operations as a check on the food/feed business operator's records. (Source: Abu Dhabi Emirate Food Law No. 2/2008 expanded)
Zone/region	A clearly defined part of a territory containing an animal subpopulations with a distinct health status with respect to a specific disease for which required surveillance, control and biosecurity measures have been applied for the purpose of international trade (Source: OIE)
Zoonoses	Diseases or infections that are naturally transmissible between vertebrate animals and humans (Source: Based on WHO)
Zoonotic agents	Organisms that can be transmitted between humans and vertebrate animals (including through food) resulting in disease or infection. (Source: Various)

³ Codex defines verification as "The application of methods, procedures, tests and other evaluations, in addition to monitoring, to determine whether a control measure is or has been operating as intended."

List of Abbreviations

ADFCA	Abu Dhabi Food Control Authority
AIRS	Animal Identification and Registration System
ALARA	As Low As Reasonably Achievable
ALOP	Acceptable Level of Protection
CPM	Commission on Phytosanitary Measures
DED	Department of Economic Development
EAD	Environment Agency Abu Dhabi
EFST	Essential Food Safety Training Programme
ESMA	Emirates Standardisation and Metrology Authority
FAO	United Nations Food and Agriculture Organization
FSC	Farmers' Services Center
GAP	Good Agricultural Practice
GCC	Gulf Cooperation Council
GHP	Good Hygienic Practice
GMP	Good Manufacturing Practice
GOP	Good Operating Practice
GVP	Good Veterinary Practice
HAAD	Health Authority Abu Dhabi
HACCP	Hazard Analysis and Critical Control Point
IPPC	International Plant Protection Convention
ISPM	International Standard for Phytosanitary Measures
JECFA	Joint Expert Committee for Food Additives (FAO)
MoEW	Ministry of Environment and Water
NZFSA	New Zealand Food Safety Authority
OIE	World Organization for Animal Health
QCC	Quality and Conformity Council
SPCA	The Society for the Prevention of Cruelty to Animals
SPS	Sanitary and Phytosanitary
UAE	United Arab Emirates
UPC	Urban Planning Council of Abu Dhabi
WHO	World Health Organization
WTO	World Trade Organization

Executive Summary

In 2011, the Abu Dhabi Food Control Authority (ADFCA) embarked on an ambitious program of policy development (Section 1.1) in recognition of its expanded mandate of responsibility for the entire food chain from farm to fork (Section 1.2) including the safety and suitability of foods imported into the Emirate. This is intended to provide all stakeholders with the foundation and rationale for the regulatory program that is intended to be rolled out and the pathway forward, one that will give life to ADFCA's vision and mission over time (Section 1.3).

The policy development process explored the policy intent and the policy drivers (Sections 2.1 and 2.2) that give rise to the need for the policies developed. The policy intent clearly identifies the connection with and importance of the Whole of Government outcomes that ADFCA is the champion entity for: Assuring food safety for consumers regardless of the source of the food, ecologically sustainable development of the agricultural sector and a secure food supply to the Emirate. These outcomes also generate a significant contribution to the social and economic wellbeing of the Emirate. Account is also taken of ADFCA's mission to protect the health of animals and plants and deliver safe food to the public. The policies are intended to align with existing laws where possible and to form the basis for ADFCA's future overall direction to planning, development and regulation of Abu Dhabi's agriculture and food sectors.

The policies are developed against the background of the current agriculture and food sectors (Section 2.3) and as well as the current policy environment that the Emirate operates within: local (Abu Dhabi), Federal (UAE), regional (GCC) and international (multilateral agreements and agencies) (Section 2.4). Issues faced by each of the agriculture and food sectors are described since it is these that the policies must also address (Sections 2.5 and 2.6).

It is important in a modern regulatory program applicable across all aspects of agriculture food production and food safety for consistent principles to guide policy development and implementation and ensure that both the regulatory program and decisions made within it remain consistent over time. The policy principles developed (Section 3) reflect the way that ADFCA will undertake its business and are in accordance with international best practice.

There are seven principles covering the following:

- The science and risk-based approach
- Food and feed business operators taking primary responsibility for producing safe and suitable food and feed (it is an on-going objective for all agriculture and food sector business operators to take this responsibility)
- A seamless and coherent management program across the food chain
- A coherent and risk-based system for imports of animal and plant products
- Consistent and equitable requirements across the food chain
- Facilitation of trade and commerce
- Coordinated and coherent service provision by ADFCA.

A number of general policies are fundamental to the regulatory system and its application in both the agriculture and food sectors. These are set out in Section 4 as follows:

- The "farm to fork" or production to consumption food chain (General Policy 1)

- An Integrated Risk Management Framework for Abu Dhabi (General Policy 2). This provides the process whereby science and risk based information, together with information on other factors relevant to health protection and the promotion of fair trade practices, are used to choose and implement appropriate controls and measures
- A Regulatory Model (General Policy 3) for application across the food chain setting out the relationships between the regulator as the setter of requirements and, assessor of compliance (through verification or inspection), the business operator and the consumers.
- Good Operating Practice (General Policy 4) as the key concept to ensure health protection across the food chain covering good agricultural, veterinary, manufacturing and hygiene practices and incorporating HACCP principles (hazard analysis and critical control point)
- Credibility and capability (General Policy 5). The credibility of ADFCA as the 'competent authority' is dependent on a sound, strong and effective regulatory program and the capability of those who operate it (including the Farmers' Services Centre), and so recognised by the public
- Consultation and communication with stakeholders (General Policy 6) which also generates confidence and success through transparency
- Consistency with the international requirements of the World Trade Organization Sanitary and Phyto-Sanitary Agreement and the Technical Barriers to Trade Agreement and the related international standards (General Policy 7)
- Harmonisation across the UAE (General Policy 8)
- Performance management (General Policy 9)
- Traceability (General Policy 10)
- Trade in Agriculture and Food Products (Imports and Exports) (General Policy 11).

In the Agriculture Sector, the policies focus on ecologically sustainable development of the sector where sustainable development is based on a balanced framework of developing and enforcing adequate standards and regulations covering agricultural production and protection, applying good agricultural practice (GAP) and increasing efficient production. The policy framework is an inventory of policies required to develop and maintain an effective agriculture sector in Abu Dhabi (Section 5.2). These policies form an integrated platform and cover the following:

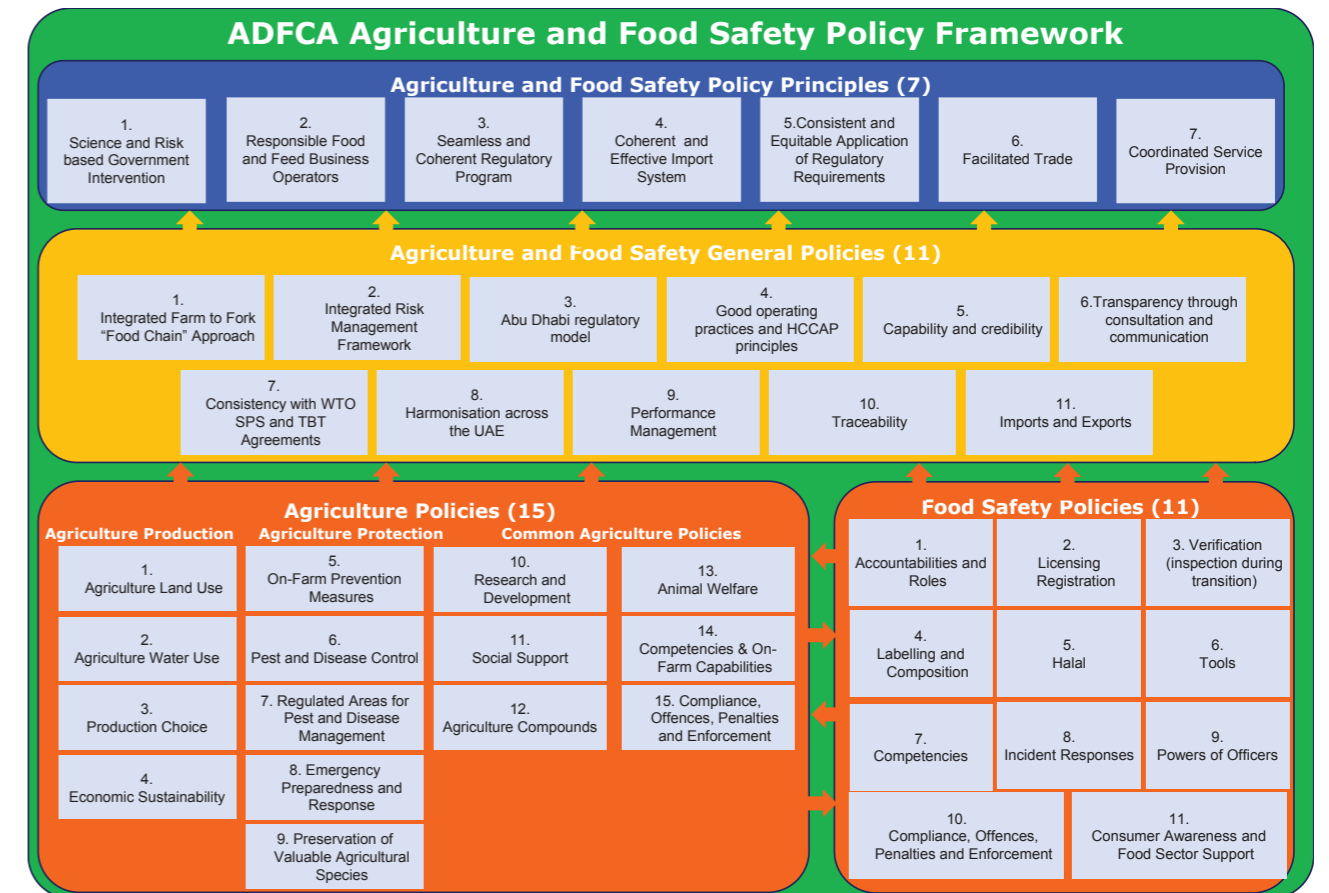
- Agriculture production
 - Agricultural land use (Policy 1 – section 5.2.1.1)
 - Agricultural water use (Policy 2 – section 5.2.1.2)
 - Production choices (Policy 3 – section 5.2.1.3)
 - Economic sustainability (Policy 4 – section 5.2.1.4)
- Agriculture protection
 - On-farm prevention measures (Policy 5 – section 5.2.2.1)
 - Pest and disease control (Policy 6 – section 5.2.2.2)
 - Regulated areas for pest and disease management (Policy 7 – section 5.2.2.3)
 - Emergency preparedness and response (Policy 8 – section 5.2.2.4)

- Preservation of valuable agricultural species (Policy 9 – section 5.2.2.5)
- Common agricultural policies
- Research and development (Policy 10 – section 5.2.3.1)
- Social support. (Policy 11 – section 5.2.3.2)
- Agriculture compounds (Policy 12 – section 5.2.3.3)
- Animal welfare (Policy 13 – section 5.2.3.4)
- Competencies and on farm capabilities (Policy 14 – section 5.2.3.5)
- Compliance, offences, penalties and enforcement (Policy 15 – section 5.2.3.6)

In the Food Sector, decisions are often called for that requires the balancing of four key factors: protection of public health and safety, support for public health objectives, assistance to consumers making informed health choices and support for a strong and sustainable industry. The primary goal is the protection of public health and safety (Section 6.1). The policy framework is an inventory of policies required to deliver safe and suitable food in Abu Dhabi (Section 6.2). These policies form an integrated platform and cover the following:

- Accountabilities and roles of key players (Policy 1 – section 6.2.1)
- Licensing, Registration, Accreditation, Recognition, Approvals (Policy 2 – section 6.2.2)
- Assessing compliance – Verification (Inspection during Transition) (Policy 3 – section 6.2.3)
- Labelling and composition (Policy 4 – section 6.2.4)
- Halal (Policy 5 – section 6.2.5)
- Tools (Policy 6 – section 6.2.6)
- Competencies (Policy 7 – section 6.2.7)
- Incident response (Policy 8 – section 6.2.8)
- Powers of officers (Policy 9 – section 6.2.9)
- Compliance, offences, penalties and enforcement (Policy 10 – section 6.2.10)
- Consumer awareness and food sector education (Policy 11 – section 6.2.11)

The following map summarizes this policy framework:



As noted at the outset, this is an ambitious policy program that will take a significant period of time to implement and apply. Its development is a major undertaking but this is only a first step – much of the success of the program will be in the implementation. Implementation will rely on the dedication and commitment of ADFCA and expertise and its people working in collaboration with industry and consumers to deliver what is envisioned to be a leading world class agriculture and food safety regulatory program.

1. Introduction

Agriculture and Food Safety and Suitability policies have been developed by the Abu Dhabi Food Control Authority (ADFCA). These are aligned with the Whole of Government strategic objectives of the Abu Dhabi Government (sustainable development of the agricultural industry, safe and suitable food for human consumption) stated within Abu Dhabi Policy Agenda, and the mission of ADFCA to protect the health of animals and plants and deliver safe food to the public. These policies form the basis for ADFCA's future overall direction to planning, development and regulating Abu Dhabi's agriculture and food sectors.

1.1. Purpose and Scope

This document contains the principles and general policies for ADFCA's involvement in the agriculture and food sectors together with policy frameworks and specific policies for each of the agriculture and food sectors. The development of this package provides the overall framework for addressing multidimensional general issues applying to the entire food chain and for addressing sector specific issues. It also establishes the basis upon which plans and decisions can be made for the medium term. In this way, the package helps inform the identification and pursuit of appropriate sector initiatives and actions.

The principles and policies are core to an integrated and strategic whole of food chain approach by ADFCA and will underpin a comprehensive agriculture and food control system comprising: the regulations and requirements; supporting services and infrastructure; monitoring; and the implementation program in each of the agriculture and food sectors.

This document is structured first to provide context (ADFCA's role and mandate, profiles of the agriculture and food sectors, the policy intent and drivers, the policy environment, current agriculture and food safety and suitability issues, and risks and assumptions). This is followed by demonstration of the policy principles that apply across the food chain and reflect ADFCA's on-going approach to intervention and decisions in the future. Overarching general policies that apply to ADFCA's future interventions and activities in both the agriculture and food sectors are then described followed by policies specific to agriculture and to food safety and suitability. The general policies will influence to a greater or lesser degree (depending on the issue) the way the specific policies are applied.

The purpose for developing policies related to agriculture and food safety includes:

- Providing for an effective, efficient and risk based regulatory regime that manages:
 - Imported and domestic agriculture and food safety and suitability issues
 - Animal and plant production, and protection and associated food safety issues
 - Sustainability in production.
- Ensuring the safety and suitability of food for sale, achieved in the most effective way
- Providing for the development of risk management measures that:
 - Minimise and manage risks to animal, plant and human health

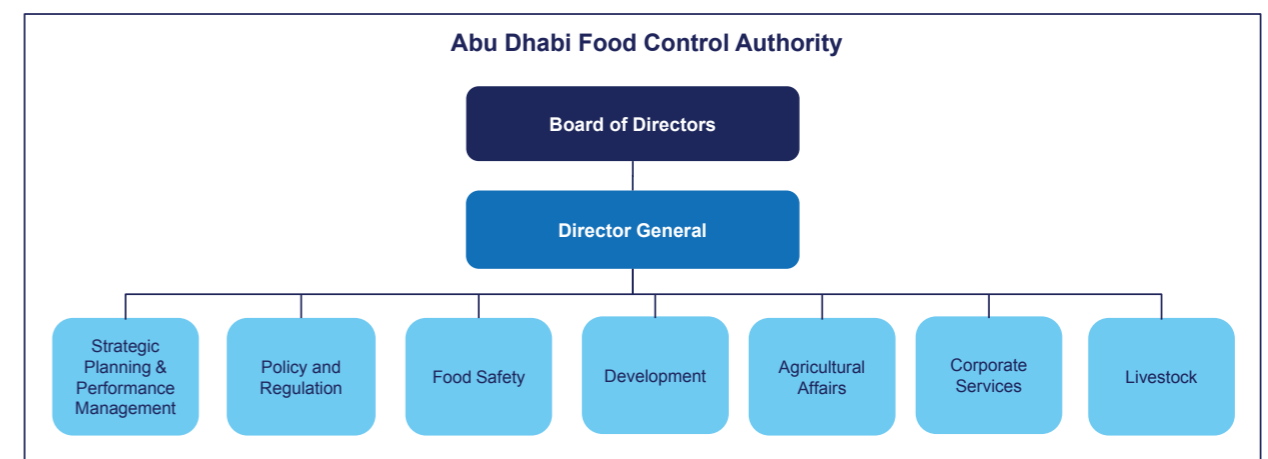
- Protect and support public health
- Provide certainty to food businesses on how requirements will affect their activities
- Require food and feed business operators (including food traders) to take responsibility for the safety and suitability of food
- Assist in enhancing the traditional agriculture and food sectors to become more economically sustainable.

1.2. Whole of 'Food Chain' Agency

Abu Dhabi Food Control Authority (ADFCA), established in 2005 as a local agency, is the only Emirate-level, autonomous government agency in the UAE that covers the entire food chain. This was effected in 2007 when the agriculture sector was added to its responsibilities. The food chain that ADFCA has the mandate for administering covers all agricultural inputs and production and protection of animals and plants, as well as food processing, manufacture, transportation and distribution through to retail, catering in all its forms and sale. The food chain also covers all food imports and exports.

On the initiative of ADFCA, the Executive Council established the Farmers' Services Centre⁴ which was set up to "... exercise all its assigned mandates under the provisions of this Law in the framework of the action plans adopted by the Abu Dhabi Food Control Authority and in coordination with it" (Article 3). The aims of the Centre are "to achieve the overall policy of the Abu Dhabi Government in the field of agriculture through providing high standard services and reducing the harmful impacts of agricultural practices on the environment" (Article 4). The law also set out the legal status of the Farmers' Services Centre and governance structure. ADFCA's "whole of food chain" mandate and core business functions are illustrated in Diagram 1 below.

Diagram 1: Functions Covered by ADFCA



⁴Law No.4 of 2009

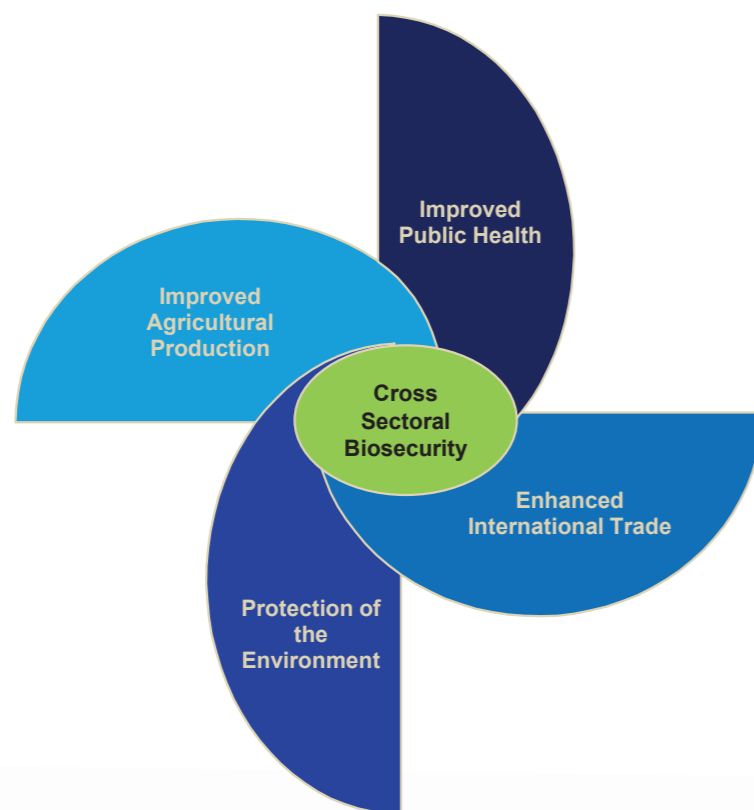
ADFCA is therefore in a unique position to parallel the best agriculture and food agencies in the world in terms of its approach to 'biosecurity' in the widest sense as defined by the Food and Agriculture Organization of the United Nations (FAO).

FAO considers biosecurity to be a strategic and integrated approach that covers policy and regulatory frameworks for analysing and managing relevant risks to human, animal and plant life and health and associated risks to the environment. Risks to human, animal and plant life include food borne diseases, zoonoses, pests and diseases, living modified organisms and their products (genetically modified organisms) and invasive alien species, whereas risks to the environment cover many of the issues concerning sustainability: water use, waste management, changes in agriculture (purposes, products, practices), responses to weather events, biodiversity, biosafety⁵ and responses to human and animal movements and plant changes (such as regionalisation).

A clear policy and legal framework, an institutional framework that defines the roles and responsibilities of relevant stakeholders, adequate technical and scientific capability (including use of risk analysis), a well-functioning infrastructure, and a system for communication and information exchange⁶ form a platform for a strategic and integrated biosecurity approach.

The benefits of such a cross sectorial approach to biosecurity entails, improved public health, enhanced international trade, improved agricultural production and protection of the environment. Biosecurity also has an important link to food security in so far as it impacts on food production and related activities.

Diagram 2: Potential benefits associated with a cross- sectorial approach to Biosecurity



⁵ Biosafety covers prevention of large-scale loss of biological integrity including ecological, medicinal, agricultural and environmental losses

⁶ Biosecurity Toolkit p16 (FAO, 2006)

ADFCA, through the concepts and policies described in the following sections, is presenting its contribution to a 'strategic and integrated approach' for dealing with risks presented across the food chain in Abu Dhabi and for biosecurity in its widest sense.

Although food imports contribute massively to Abu Dhabi, there is also strong focus on the local production of animal and plant products for food. The potential risks to a country's production base and mitigating consequential risks from trade and commerce in agricultural and food products have been and will continue to be, key determinants of bilateral trade between countries. In this context the Abu Dhabi Government recognises the commitment to the World Trade Organization (WTO) and the Sanitary and Phyto-Sanitary (SPS) Agreement with the underlying international standards.

The future aspirations of Abu Dhabi depends on a strong platform of domestic 'biosecurity' that provides health, environmental and economic benefits to its people. In respect of food safety and suitability, ensuring that consumers have confidence in the integrity of Abu Dhabi's products and regulatory processes is important in achieving these aspirations.

In setting up ADFCA as Abu Dhabi's Competent Authority, government has provided the framework to ensure a single line of accountability and the ability to apply a systems approach to regulatory activities across the total agriculture/food value chain (including food imports) and apply an integrated risk management framework. This holistic approach to regulatory activities across the entire food chain will provide regulatory efficiencies and enhance food safety and suitability assurances to all related businesses and consumers within Abu Dhabi.

In addition to improved provision of assurances for animal and plant products in commerce and trade, the goals of the Competent Authority include the delivery of a consistent and efficient regulatory system to domestic and import/export-based businesses, and a rapid and integrated response to any biosecurity-related issues and emergencies arising throughout the food chain.

An arbitrary line between the food and agriculture sectors has been identified to better address the policy frameworks for agriculture production, animal health and plant protection on the one hand and food delivery, food safety and human health and wellbeing on the other. The line is arbitrary because measures relevant to food safety and suitability and to human health and wellbeing can be taken at any point in the food chain starting at the production stage and continuing right through to retail sale and catering services.

1.3. Policy Development Approach

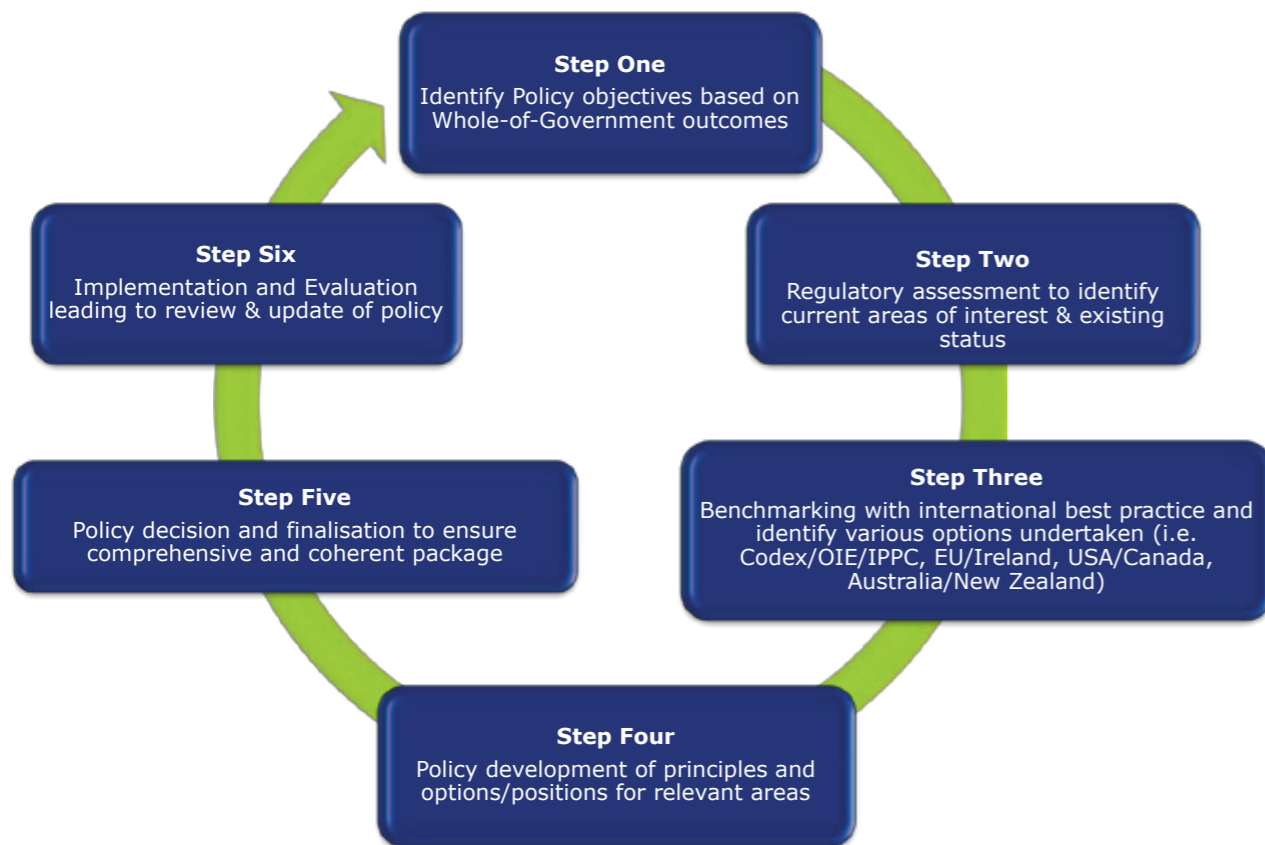
At the highest level, policy development involves the application of principles and decisions to provide a plan and course of action with which government seeks to achieve a long-term purpose or address a particular problem. Policy decisions are often embodied in legislation applicable to a political state or region.

This policy document has been developed following the set of steps described below and reflected in Diagram 3.

• **Step One** – ADFCA identified the Policy objectives derived from the Emirate's Whole-of-Government outcomes and the issues that need to be addressed (as described in Section 2)

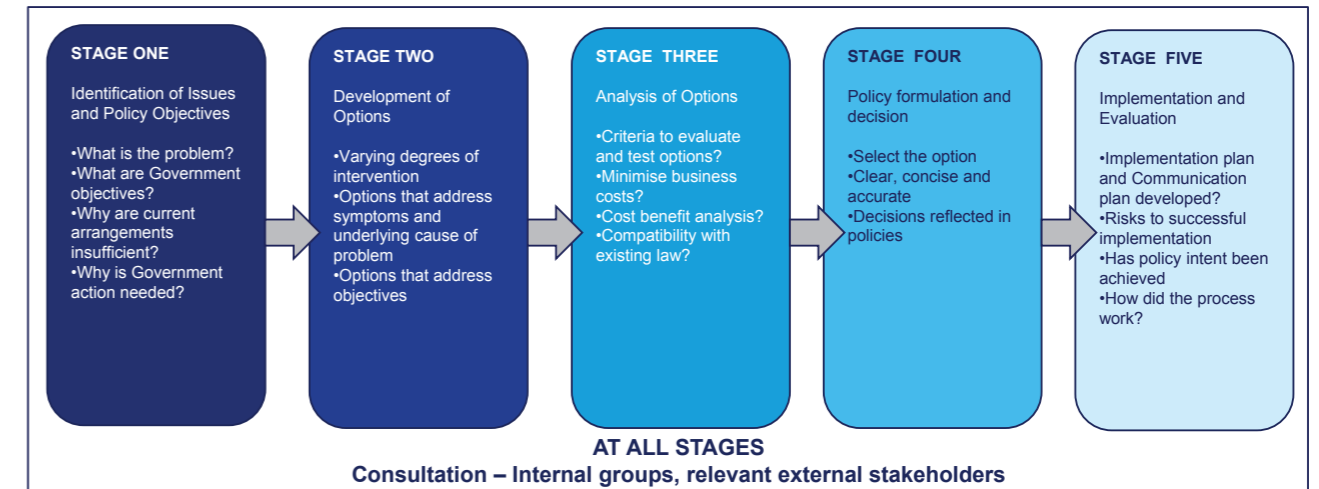
- **Step Two** – Undertake Regulatory assessment as a precursor to benchmarking to identify current situation, areas of interest and enhancements
- **Step Three** – Benchmarking with world best practice including Codex, OIE, IPPC as well as various country-level models (i.e. EU/Ireland, USA/Canada, Australia/New Zealand) and identified various options as part of the noted recommendations
- **Step Four** – Setting the policy principles and the option chosen for the policy position in various relevant areas
- **Step Five** – Deciding on the appropriate policies and finalising the complete platform of policies. This policy document represents Step Five in the development process
- **Step Six** – Implement the policies, set performance indicators and evaluate effectiveness of measures. Policies may need to be adjusted depending on the results of evaluation.

Diagram 3: Current Policy Process



This document reflects the development of policy principles and positions and presents these as a comprehensive package for decision and implementation. In future, the policy process will be streamlined and will follow the Stages described in Diagram 4.

Diagram 4: Policy Development Process in the Future



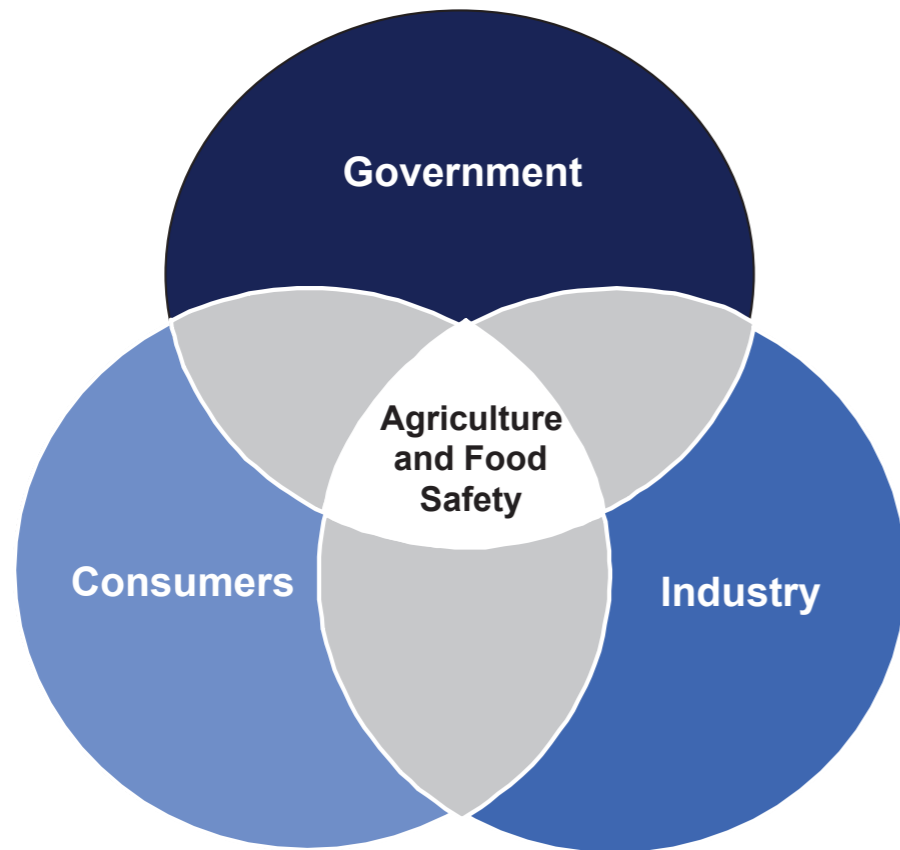
The collective policies in this document are intended to reflect the long term objectives of the Abu Dhabi Government as undertaken by ADFCA. They are intended to provide the platform for future development and planning and to ensure the connectedness and linkages across the food supply chain from farm to fork.

1.4. Stakeholders

This document is intended namely for three key groups within Abu Dhabi:

- **Government Partners** – those in Government external to ADFCA. At the highest level, the ADFCA board owns this document but for those external to ADFCA, this document provides them with clear and demonstrable evidence of the policies driving delivery of the Whole-of-Government Outcomes that are championed by ADFCA. The relationship between ADFCA and other government agencies (Federal and local) has the potential to mutually enhance and advance the delivery of respective mandates and the Whole-of-Government Outcomes. (e.g. Nutritional status information required by Health Authorities to enable decisions in food safety and suitability to be undertaken effectively such as monitoring restricted foods sold in schools). Similarly, there are areas of key mutual interest between ADFCA and Environment Agency - Abu Dhabi and the Department of Economic Development.
- **Industry** – all businesses engaged in agriculture input production (farm suppliers etc.), primary production (farmers and animal owners), the food industry (manufacturers, transporters and distributors, storage/warehousing, retailers/food sellers, and catering service businesses) who have an interest in the objectives and policies of government impacting on them. ADFCA is committed to a transparent and collaborative approach to its activities and to ensuring delivery of an efficient and effective integrated farm to fork approach.
- **Consumers** – those who purchase food in Abu Dhabi, whether they are citizens, residents or visitors, and who are central to many of the policies stated in this document, particularly in the food safety area. They are therefore a key stakeholder group for this document.

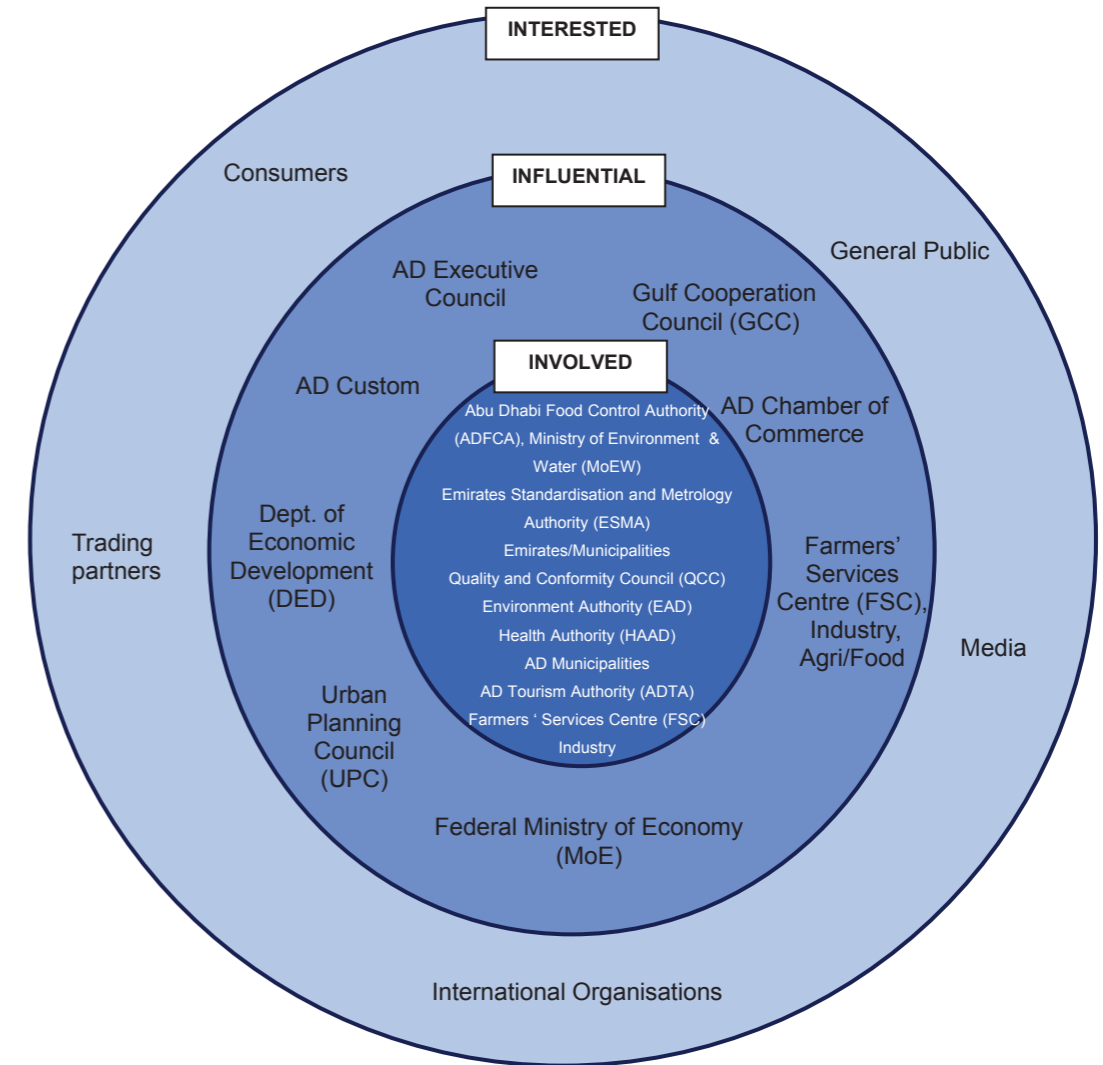
Diagram 5: Key stakeholders



The approach set out in this document will contribute to the good governance, sound management and effective accountability of the agriculture and food sectors within the Emirate.

The level of engagement of specific stakeholders varies across three discrete areas: interested, influenced, and involved. The supporting Policy Communications Strategy prepared in conjunction with this Policy document attributes the levels of engagement to particular stakeholders as set out in Diagram 6 next page.

Diagram 6: Levels of engagement of particular groups/agencies



The *Communications Strategy* also addresses stakeholder management, involvement, monitoring and acknowledgment. The particular approach reflected within the Communication Strategy entails activities being developed in three phases focusing on Awareness, Attitudes and Action.

1.5. Assumptions and Risks

There are a number of assumptions associated with the application and implementation of the concepts and policies contained in this document. These include:

- Political support for the approach
- Resource availability for effective implementation

- Capability to deliver
- Collaboration and coordination within the Emirate and with Federal Government to enable success in an integrated manner.

Additionally, there are also a number of risks associated with the application and implementation of the concepts and policies contained in this document. These include:

- Weak ownership of the policies
- Possibility of development of agriculture and food safety policies at the Federal level or in other Emirates, which are not aligned with this policy
- Difficulty effecting the system changes necessary to implement the policies
- Lack of or weak cooperation by other related agencies
- Poor communication of the desired change
- Engagement barriers
- Resistance to change by external stakeholders or within ADFCA
- Lack of alignment across the GCC
- Ineffective change management
- Weak support by key stakeholders
- High potential for environmental issues to prevent agriculture growth (such as land degradation, depletion and salinisation of groundwater).

Examples of mitigating approaches that could be used to address the above risks include:

- Clarity of accountabilities, roles and responsibilities
- Close cooperation and collaboration between Federal and local agencies and at a regional level
- Senior leadership commitment to change
- Clear communication strategy developed and implemented
- Comprehensive implementation plan and appropriate implementation resources
- Agriculture policies and consequential implementation that have considered environmental impacts.

2. Policy Context

In this section the rationale for the preparation of this policy document is outlined. The current agriculture and food safety environment in the UAE and the Emirate of Abu Dhabi is described, as is the policy intent and policy drivers that were considered in the preparation of the sector framework and associated policies.

2.1. Policy Intent

The policy intent and direction relevant to this document is drawn from the Abu Dhabi Government's wider Whole of Government Outcomes⁷. ADFCA is the Champion Entity responsible for the delivery and oversight of three of these

⁷There is a version of the Abu Dhabi Government policy agenda but the latest is not yet in the public arena

⁸ ADFCA Strategic Plan 2011-2015, Version 2

outcomes. All three of these are fundamental to the policies contained in this document⁸:

• Assuring Food Safety

Assure food safety through the entire food chain, both domestically and on all Abu Dhabi emirate borders to protect the public from adverse health risks related to food consumption and further reduce food borne illness.

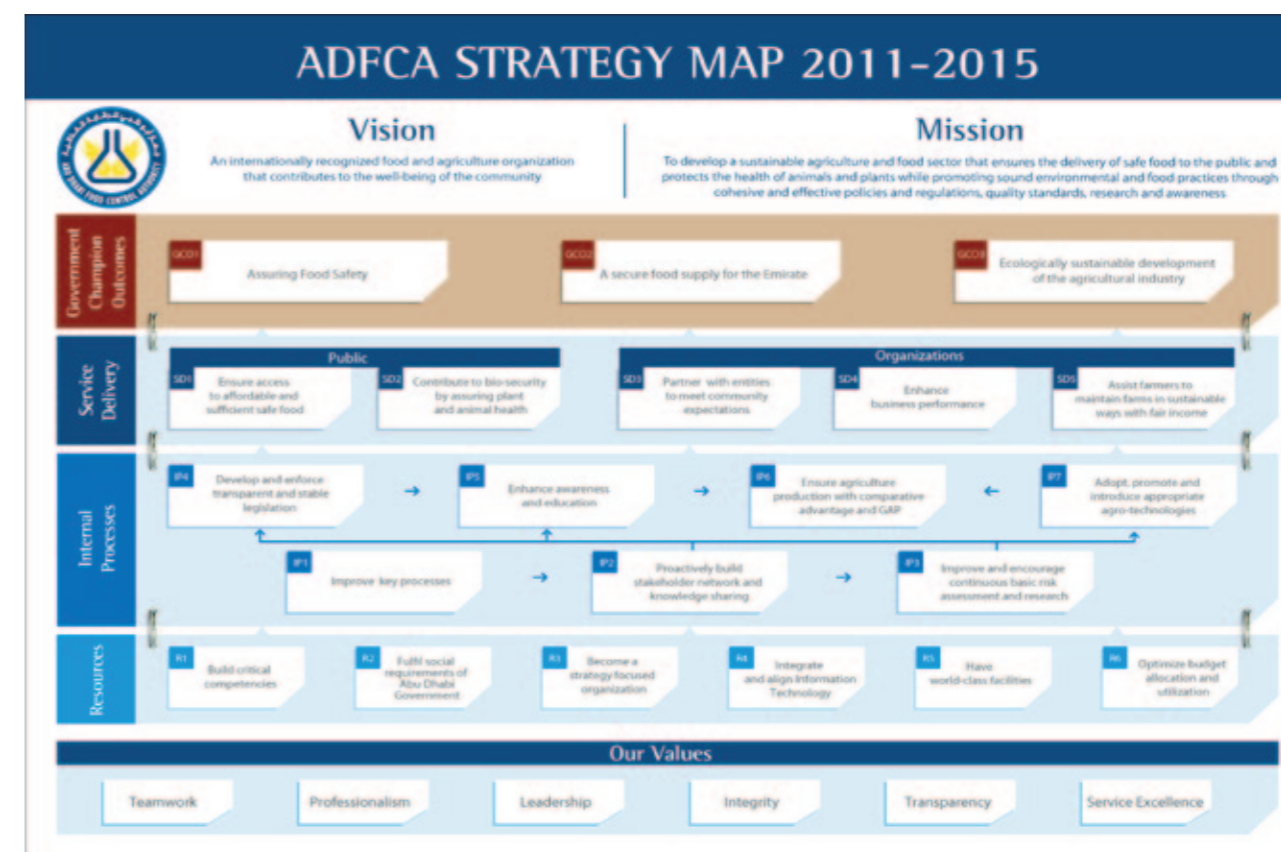
• Ecologically Sustainable Development of the Agricultural Sector

Enable sustainable development which is based on a balanced framework of developing and enforcing adequate agriculture regulations, applying GAP, increasing efficient agriculture production and applying an effective agriculture protection program.

• Secure Food Supply to the Emirate

Address the availability, accessibility and affordability of food to ensure a secure food supply for the population.

Diagram 7: ADFCA Strategy map 2011 - 2015



The agriculture and food sectors are important contributors to Abu Dhabi's economy. ADFCA's activities therefore must take account of economic impacts in the policy development, implementation and evaluation.

To deliver on the relevant outcomes, ADFCA has been working on developing the following responses:

- Identification of concepts and policies applicable across the food chain including the application of a risk based approach
- Pursuit of a comprehensive approach to the development of a sustainable agriculture sector to increase its contribution, improve all aspects of production, while acknowledging and responding to food safety considerations

- Development of a food safety system comprising a policy framework and core policies with reference to relevant international best practice
- Provision of underpinning legislative platform throughout the food chain
- Incorporation of strategies to minimise health risks emanating from consumption of food
- Collaboration with stakeholders to deliver initiatives and operational system requirements
- Compliance of the business operator and system oversight
- Delivery of food business and consumer/public training, awareness and education.

2.2. Policy Drivers

ADFCA has not developed this document in isolation from a broad range developments and policy drivers at international, regional, Federal and Emirate/local level. In the Abu Dhabi Economic Vision 2030, the Government identified nine pillars to form the architecture of the Emirate's social, political and economic future. These are all relevant to agriculture and food safety policy particularly: a large empowered private sector; a sustainable knowledge-based economy; an optimal, transparent regulatory environment; continuation of strong and diverse international relationships; and optimisation of the Emirate's resources.

Government's policy interests are set in a wider global context which has seen a worldwide increase in the consumer and government demands for public health and safety in relation to food.

Consumers are more aware of food related issues and, for those who have choice, are exercising greater demands for food that will address personal health and wellbeing preferences. These are often not safety related. Consumers seek these demands with little reference to the affordability of food and the added costs that demands place on food. International trade in food and the movement of people means there has been an enormous increase in the volumes of food traded and the diversity of foods in any country or region. Trade across the food chain has been managed internationally under the WTO SPS and TBT Agreements which manage respectively animal, plant and human health matters and technical barriers to trade. This has generated demands on governments that, coupled with economic development and often the growth in agricultural production, have given focus to government involvement in the trade and commerce in food and controls in the food chain within a country.

Country-specific controls may deal with specific agricultural or environmental issues (such as animal health and plant protection, climate change, water use. and sustainable development) as well as with down chain developments including processing, manufacturing, imports, retail and catering. In turn, this has focused attention on the responsibilities of businesses across the farm to fork continuum and the role they have in complying with requirements and ensuring the safety and suitability of food to the population.

2.2.1. The General Policy drivers are:

- Government policy interests and aspirations

- Contribution to social health and wellbeing
- Greater demand for health protection
- Changing consumer behaviours and choices
- Food security demand on availability, accessibility and affordability of food
- More complex food chains and emerging technologies
- New emerging diseases and contaminants and other potential risks to health, including trans-boundary pests and diseases
- Population growth and changing demographics
- WTO- SPS, TBT and other international obligations
- Authority evolution as a government role model/leading agency on the regional level and well recognised on the international level
- Economic development / desired increase in contribution to overall GDP
- Harmonisation / alignment with international standards
- Animal health and plant protection.

2.2.2. The drivers specific to the Agriculture sector are identified as the following:

- Changing agriculture focus and pursuing improved practices and appropriate technologies
- Greater diversification and commercialisation of agriculture
- Enhancing Farmers' social level
- Significance to the social and cultural dimension in the Emirate
- Government commitment to assisting the sector make the maximum contribution to the supply of food, in an ecologically and economically sustainable way
- Increased exposure to animal and plant health risks and downstream food safety concerns
- Natural resources sustainability including water use optimisation, land use, soil management (i.e. the use of chemicals), and waste management.

2.2.3. The drivers specific to food safety and suitability are identified as the following:

- Consumer safety and public health
- Informed consumer choice
- Food business operators' (including food traders) responsibilities
- Compliance with legislative requirements
- Increasing volume and diversity of traded foods and food that is the subject of commerce.

2.3. Current Policy Environment

This section outlines the current Abu Dhabi policy environment relevant to the agriculture and food sectors. It sets out the relationship between, and responsibilities of, the Federal, Emirate and agency hierarchy in relation agriculture and food.

The Regulatory assessment and Benchmarking exercise undertaken by ADFCA in 2009 noted the relative youth of the functioning governance structures within the UAE. These structures interact across the region as a whole in relation to uniform implementation and enforcement of legislation that are part of international or region-specific agreements. The effectiveness of legislation could be improved and clearer guidance provided to the sectors.

The Regulatory assessment and Benchmarking exercise made recommendations in several areas: i.e. WTO commitments and UAE harmonisation/coordination, approach to risk analysis/management, transparency, traceability, accountabilities and responsibilities, education and awareness, rationalisation of licensing, labelling and composition, sustainability (water usage, waste management, biodiversity, biosafety), plant protection and health and agricultural compounds, inspection/audit/monitoring, marketing, food safety programs, grants and social support and legislation). ADFCA has grouped the recommendations, allocated a ranking for action/significance prioritisation and is in the process of addressing the recommendations as appropriate.

In general, the developments that have taken place both within the agricultural and food production sectors have primarily occurred within the past forty years or less, which was affected by the significant changes to the demographics of the population and has impacted the environment in ways that were not envisaged.

The result of this relatively short history is a two part industry in Abu Dhabi with a separate, unconnected policy development, until recently. The first part of the industry is made up of primary producers and the second part is made up of the remainder of the food chain industry. It is timely for this asymmetrical development to be brought into alignment and aim for coordination and harmonisation across the agri-food sectors as a whole.

Nonetheless, an integrated agriculture and food safety policy includes coverage of biosecurity (in the broad FAO use) and biosafety on the agriculture side and imports on the food side. It provides a basis for the establishment of national agriculture and food safety and suitability requirements, and guidance for application to specific sectors in the food chain.

2.3.1. Policy – Strategy Framework

Strategy complements and operates in parallel with policy and this has been the case within the Abu Dhabi Government generally and in ADFCA specifically. Policy enhances strategy to be aligned with Government vision in an iterative way and strategy contributes to changes in policies.

The Abu Dhabi Whole of Government Strategic Planning Framework generates the overarching agriculture and food safety objectives that provide the policy intent and direction relevant to the development of policy principles and

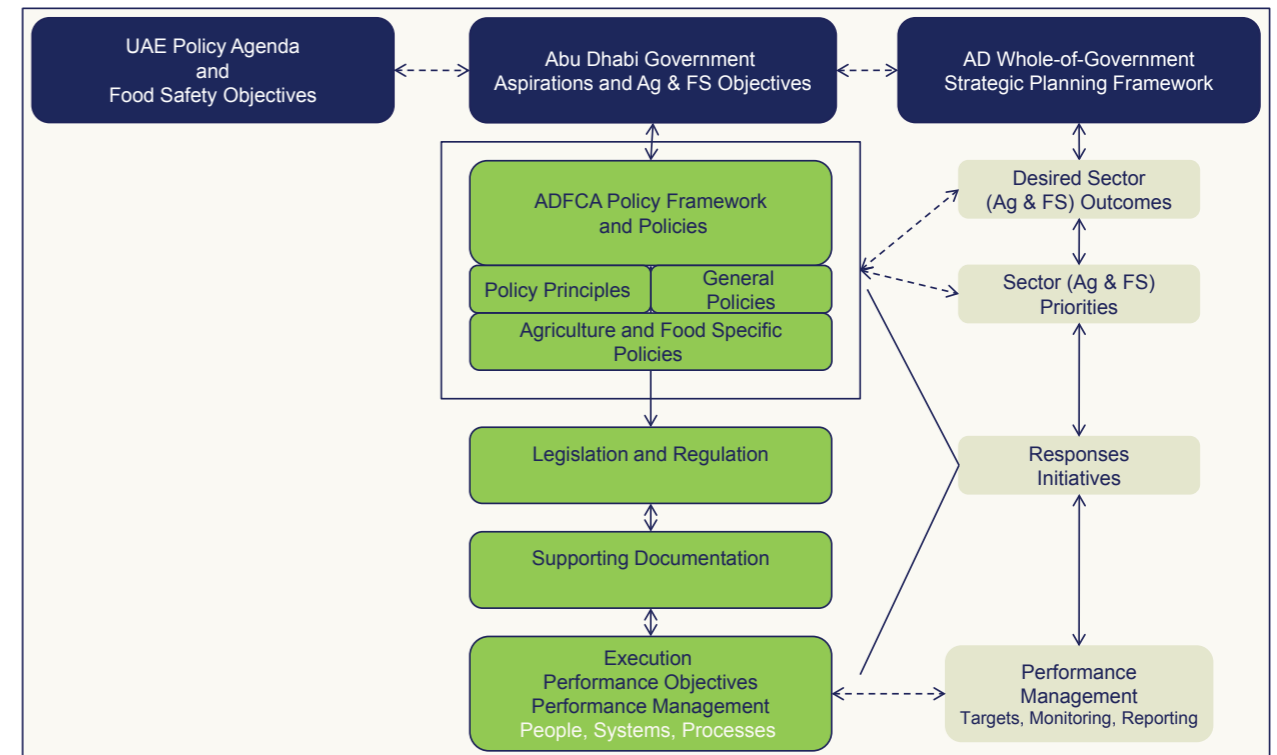
general policies. Sector priorities are then determined for the Agriculture and Food sectors that drive the development of sector specific policies.

The responses and initiatives to the sector priorities in the Strategic Planning Framework are reflected in the legislative change and implementation of the policy framework and policies.

Finally, Whole of Government performance management parallels the performance management of policy implementation.

This strategy planning/policy framework inter-relationship is described in Diagram 8 below.

Diagram 8: Government Inter-relationships and Policy Framework



2.3.2. Legislative Responsibilities

Although ADFCA has the clear mandate over agriculture and food safety, yet Regional, Federal and Emirate level arrangements and agencies have responsibility for different elements of the legislative framework operating in the agri-food sector which adds a tier of complexity and more coherent communication within the regulatory program.

Diagram 9: Legislative responsibilities



2.4. Overview of the Current Agriculture and Food Sector Profiles

An understanding of the agriculture and food sectors is essential to the policy in order to understand the current status and determine the starting point against future progress to be measured as well as providing an appreciation of the issues, risks and opportunities facing the government and the sector.

Summary of Agriculture and Food Sector profiles are described below:

Agriculture⁹ :

Since 1970, the development of the plant and livestock sectors in Abu Dhabi has expanded rapidly mainly through Government supported programs. The Government has provided infrastructure and water supplies at no cost and has subsidised inputs to encourage a farming culture. The Emirate’s harsh weather conditions and critical water reservoir present particular challenges to the Emirates agricultural sector.

Around 24,000 agriculture farms, predominantly growing date palm trees, led to an emergence of a growing date processing industry. The number of palm trees in Abu Dhabi is estimated at 33 million, with production per tree ranging between 50-120 kg. There is also growth in the vegetable production sector. Productivity in 2009 was 2.2 tons/donum of vegetables. Tomato production comprised the largest share of the vegetable growing area (6,110 donums) with an average productivity of 5.31 tons/donum.

The volume of imported fodder amounted to 713,154 tons in 2009, with an increase of 145% compared with 2008.

⁹ Statistics provided below are drawn mainly from the Annual Bulletin of Agricultural Statistics 2009, the ADFCA Annual Report 2009 and the Farmers Services Centre reports

About 87% of the imported fodder was distributed to livestock holders.

The livestock sector (i.e. animals for food production purposes) accounts for a small contribution to GDP (less than 1%) but it employs a large number of agricultural holders and their families as part of the country’s heritage. The fact that animal protein is crucial for food security makes it a key public health concern; 60% of human pathogens are zoonotic, 75% of the emerging diseases are zoonotic and 80% of agents with potential use in bioterrorism are zoonotic pathogens. It is also important because of the opportunity for livestock breeding activities to increase the contribution of livestock to GDP.

In 2009, there were a total of 2,726,671 livestock animals in the Emirate comprising 2,305,603 goats and sheep, 42,992 cattle, 378,076 camels. Sheep and goats are ranked first in terms of providing red meat in the Emirate, followed by camels and cows. Sheep and goats are regarded as a major source for red meat, and may contribute largely in resolving the shortage in animal protein, which is envisaged as one of the key food security concerns in general.

Animal health status of livestock in Abu Dhabi impacts on productivity, marketability of the animal or the resultant food and prospective animal movements. Reported animal diseases in 2009 comprised parasitic diseases (922,046 cases or 38% of all reported cases), internal diseases (715,119 cases or 29%), communicable diseases (526,638 cases or 21%), and infectious diseases (283,709 cases or 12%). This highlights the need for strong local and national governance of veterinary services, and a clear understanding of the relationships across animal health, animal production, agricultural compounds and the prevailing environmental conditions.

In the Emirate of Abu Dhabi there are (as at February 2012) 39 Extension centres and 23 Marketing centres. In 2010 these were all brought under the operation and control of the Farmers’ Services Centre.

Aquaculture is an emerging sector in Abu Dhabi. The most significant development has been the establishment of the world’s largest re-circulating aquaculture system for sturgeons and the production of premium caviar. A project of such immense dimensions and capital intensiveness may be just the start of a much broader aquaculture sector in Abu Dhabi.

The estimated 127 million eggs produced from four poultry farms in 2010 in Abu Dhabi represented only 15% of the UAE demand. Broiler production, which is only 15,000 tonnes produced from eight farms in 2010, covered 10% of the total demand.

Abu Dhabi’s volume of foreign trade in agricultural commodities grew over the period 2005-2009 at an average rate of 18% per annum, which was largely due to rises in the volume of imports and exports. In 2009, the contribution of agricultural commodities to foreign trade comprised: imports 92%, exports 6%, and re-exports 2%.

Food:

Protection of the health and wellbeing of citizens and visitors to Abu Dhabi is one of the primary concerns of the Government. A key factor is ensuring the safety of food.

In 2009, there were 1.6 million residents (406,797 citizens and 1,236,547 non-nationals) and around 1.54 million tourists visiting Abu Dhabi every year. In any year, ADFCA is protecting the health and wellbeing of 3.2 million people noting that the population has an average growth rate of 4.47% per year.

¹⁰ Abu Dhabi Food Control Authority (ADFCA)

There are over 11,000¹⁰ food businesses in the Emirate of Abu Dhabi. The percentage by broad category of food businesses are:

- Retail 34%
- Catering and food service 57%
- Storage and transport 3%
- Other 5%
- Manufacturing 1%

There are over 64,200 food handlers in the agri-food sector of which over 42% have received certification under the ADFCA “Essential Food Safety Training (EFST) Program”. Again, the percentage distribution of food handlers in each of a number of broad food business categories are (December 2011):

- Catering and food service 59%
- Retail 28%
- Other 6.2%
- Manufacturing 6.3%
- Primary production 0.5%

A wide variety of ethnicities are represented by food handlers with over half south Asian (the predominant languages of this group are Indian (Hindi, Malayalam and Urdu)) and almost half in the 26-35 age group.

ADFCA has an inspection and regulatory system in place and is addressing many of the key food safety issues associated with food businesses in Abu Dhabi. The current regulatory model is not fully risk based although efforts have been made to move towards such an approach. This is particularly evident in relation to border control where a program is in train to expand on the inherent-risk based system to further apply priorities that incorporate additional parameters such as source of product, brand name, importer track history for imported food. Similarly risk factors associated with local market inspection extends to include the type of food handled, the method of handling, the scale of operation and the risk to domestic consumers.

During 2010-2011 over 2.3 million tonnes of food were imported in around 174,000 consignments. There are seven border entry points and one, Zayed Port, has now fully implemented a risk-based approach to import inspection. The approach categorises imports according to the inherent risk of the food and determines the type of procedure as red, yellow or green. Of the 33,000 import consignments processed at Zayed Port between Nov 2009 and Dec 2011, the following categorisation resulted:

- Red channel inspection (sampling and laboratory testing) 31% of consignments
- Yellow channel inspection (physical cargo examination) 53% of consignments
- Green channel inspection (consignment documentation review) 16% of consignments

Imports during this period from Zayed port comprised the following main broad categories of foods:

- Fruit and vegetables 24% of consignments
- Cereals and pulses 16% of consignments

- Milk and cheeses 13% of consignments
- Rice and sugar 7% of consignments
- Meats 3% of consignments

2.5. Current Agriculture Issues

Agriculture is an important strategic sector for the Emirate. It is significant for the following reasons:

- Its place as a diversification of non-petroleum sectors
- Contribution to food supply and food security
- Importance to food safety through application of appropriate practices
- Importance to Emirate cultural dimensions.

The sector poses a number of challenges as there is a desire to see a greater economic contribution of agriculture, both in terms of quantity and quality in order to increase economic return. These are covered below in terms of issues generic to agriculture then issues specific to each of the animal and plants areas.

2.5.1. Generic Agriculture Issues

There are a number of generic issues to be addressed that will contribute to enhancing the agriculture sector, mainly:

- Enhancing and transforming farming to become sustainable and more productive
- Exploring mixed farming options (livestock, feed production, and vegetable and date production) and intensive farming
- Encouraging the commercialisation of small scale farms and partnerships between small scale farms and agribusiness interests
- Applying social support in a way that does not distort agriculture growth
- Aligning research and development with the achievement of best practice and encouraging uptake
- Improving on-farm water optimisation and water infrastructure
- Improving collection of data on, and awareness of, the cost of production of livestock and plant crops
- Identifying and opening new domestic markets and improving the marketing chain which otherwise leads to domestic seasonal production spikes and resultant seasonal surpluses and shortages
- Generating a ‘market vision’ to ensure opportunities are not lost particularly for import competition with fresh vegetables from European and other markets
- Following international food safety standards and encouraging adoption of good agriculture practices to enhance market opportunities, and
- Developing an integrated and coordinated approach across agencies involved in the sector.

2.5.2. Agriculture production, plant protection and animal health issues

In the agriculture production and protection area, a set of specific issues are considered, as noted below:

- Environmental factors - water use and irrigation, land use, waste and climatic impacts
- Production methods such as intensive animal husbandry, aquaculture, crops in open fields, tunnels, green houses, hydroponic and soilless
- Choice of production - choice of animals (species and breed) and plants (species requiring low levels of water and more able to survive in high temperatures and salinity) and mixtures of the two
- Farm practices for production including for plant protection, animal health and animal welfare (i.e. on-farm use of agricultural compounds such as fertilisers, chemicals, biologicals, veterinary drugs, vaccines and hormones for addressing plant protection, animal health and animal welfare)
- Animal traceability – the role of the Animal Registration and Identification System and the uptake by other Emirates to trace animal movements across the UAE¹¹.

The Abu Dhabi Government has stated it is keen to continue to support agriculture, requiring farms to be more efficient and economically sustainable. Various initiatives are being pursued. A key one has been the establishment of the Farmers' Services Centre with the objective of improving yields, quality and income, together with the improved control and use of water. The centre focused its efforts on the following initiatives:

- Introducing modern planning and production systems, production choice, integrated farming options, farming methods and distribution
- Training farmers in best practice – including field demonstrations
- Assisting to introduce proper farm management including budgeting
- Facilitating the marketing of local agriculture produce.

2.6. Food Safety and Suitability Issues

Key considerations and issues in developing food safety policy are set out below.

2.6.1. Generic food safety and suitability issues

There are a number of generic issues that will contribute to enhancing the food sector, mainly:

- Identifying and opening new (primarily) domestic markets and improving the marketing chain which otherwise leads to domestic seasonal production spikes and resultant seasonal surpluses and shortages
- Generating a 'market vision' to ensure opportunities are not lost particularly to market fresh agriculture produce and provide import competition
- Aligning with international food safety standards and encouraging adoption of good agriculture practices to enhance market opportunities

¹¹ This area has been addressed and shall be considered on the Federal level in order for traceability to be applied across the UAE

- Exploring manufacturing options and emerging processing technologies
- Improving infrastructure and research on the food production costs
- Improving the legislative platform.

2.6.2. Imports and trade

In the imports area there are the following specific issues that need to be addressed:

- Open borders with other Emirates in the UAE may carry the potential for the introduction of accidental as well as intentional hazards in, and risks from food which in turn affects safety, suitability and availability of food within the Emirate
- A lack of data on food imports through the international Emirate borders (although this data is being collected and will improve over time)
- The need to apply further risk management measures to imports control (in addition to the current approach of categorising food on inherent risks in the food) to assist in better focussing resources on the highest risk foods which requires data collection and analysis and the development of bilateral relationships.

2.6.3. New technology

In the new technology area, the following issues arise:

- Changes in production practices
- New sources of food and food ingredients, (e.g. genetically engineered food)
- New packaging technology.

2.6.4. Consumer growth and demand

In the consumer area, the following issues are considered:

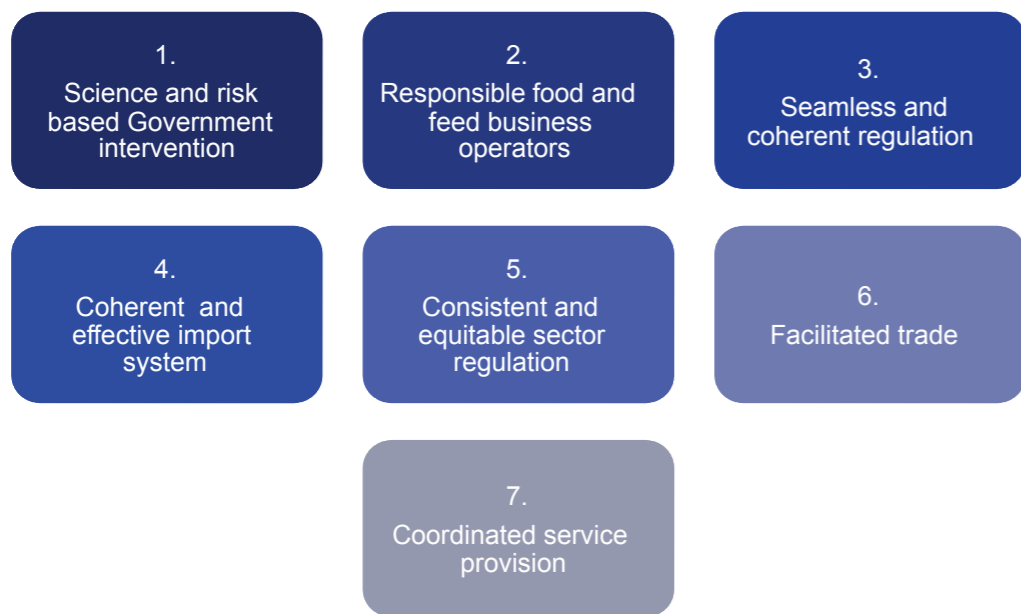
- Changes in consumption patterns, trends, preferences, eating habits, life style and expectations
- Changes in the health status of the population e.g. the need for particular nutritional deficiencies to be addressed
- Changes in demographic composition and economic status of the population and country,
- Cultural factors such as the significance of halal
- Changes in consumers' volume and diversity, in addition to increased tourism, require additional measures to ensure food safety and food security.

3. Overarching Agriculture and Food Safety & Suitability Policy Principles

The following principles are applied across all aspects of agriculture and food safety and suitability policy development. These policy principles are consistent with international best practice and reflect the means by which ADFCA undertakes its business.

As noted in Section 2, Abu Dhabi’s strategic objectives are assuring food safety and ecologically sustainable development of the agricultural sector. The following principles reflect a strong commitment to consistent and integrated governance across the agriculture/food chain and ensure that, wherever policy decisions are made, the principles applied by government will be constant.

Diagram 10: Policy principles



Policy Principle 1

Government involvement in the sectors and regulatory controls will be science and risk-based as far as possible.

The application of a science and risk-based approach (as far as practicable) to government intervention in agriculture and food safety risks and to any related regulation at the most appropriate point in the food chain and consistent with international guidelines and practices. The intervention (control measures or requirements) aligns closely with the FAO/WHO Codex Alimentarius principles on managing risk through risk analysis, as well as those of OIE and IPPC.

Policy Principle 2

Food and feed business operators will take primary responsibility for producing safe and suitable food and feed.

This principle addresses the high level outcome of delivering safe and suitable food and is a fundamental premise of the modern HACCP based approach to delivering safe and suitable food to consumers. It is an on-going objective for all agriculture and food sector business operators to take this responsibility and transitional arrangements will rely on the level of maturity of specific groups within the sectors to determine the pace of change in responsibility.

In the current environment, significant reliance is on an ADFCA inspector to monitor business operations and advise

on how to conduct their business in order to deliver safe food. However, efforts are on-going to develop dynamic and user friendly legislation and codes of practice to assist business operators to understand their obligations, while structured extension and educational programs have been introduced to elevate awareness in food safety for all food handlers operating within the Emirate. Unless safety and suitability is ‘built in’ to individual business operations and is understood by the business operator and employees, the business operator will not be able to address the unexpected or changes in their businesses. Business operators should not rely on ADFCA to ensure they deliver safe food but should be expected to take that responsibility themselves.

Policy Principle 3

The regulatory program, for which ADFCA is responsible and within which decisions on the type of involvement are made, will be seamless and coherent, as far as possible, across the food chain.

Control of the food chain in Abu Dhabi has developed over the past decade. Until recently, the agriculture and food sectors were managed by separate Government entities. As a result, the overall regulatory program is characterised by some gaps and differences in treatment. Some of the legal provisions are risk based, others are less so. As the two key attributes of coherence are simplicity and proportionality; ADFCA is keen to introduce a ‘seamless’ regulatory program that is simple, practical and allows effective interfaces between legislation and between agencies covering or impacting different sectors and different parts of the food chain, and is proportionate to the risk which requires the minimum necessary requirements appropriate to the risks presented by the business.

Policy Principle 4

A coherent, risk based, whole of chain import system with effective and sufficient assurances and measures to ensure an appropriate level of consumer protection.

Imports of animals and plants and their food products, are an essential and significant feature of the Abu Dhabi agriculture and food sectors, due to the fact that Abu Dhabi is a bulk importer of feed, agricultural compounds and resources and of food. Substantial resources and priorities are applied, collaborating with the relevant Federal and local agencies as appropriate, to ensure the protection programme covering the import system is efficient, effective and delivers to the needs of the Emirate.

Policy Principle 5

Consistent and equitable application of regulatory requirements across industries and sectors.

Abu Dhabi has the opportunity to deliver harmonised approaches in the regulation of agriculture and food across the farm to fork continuum for two key reasons: much of the regulation in place in Abu Dhabi is recent; and ADFCA is responsible for all relevant groups in the sectors across the integrated food chain. Some developments have tended to be industry, sector or group specific but the opportunity now is to address consistency and equity over all sectors over time. In the food safety environment, harmonisation and consistent application means calibrating the way regulatory controls are applied across both geographic areas and across groups and businesses, which is critical to ensuring consistency.

Policy Principle 6

Trade and commerce in food as well as food producing animals and plants and their inputs shall be facilitated.

It will be important over time to maintain a strong focus on the contribution that animals and plants and their products make to the Abu Dhabi economy and to the regions within the Emirate. The trade facilitation, wherever it occurs in the food chain – between producer and processor, manufacturer and distributor or retailer and consumer – needs to be factored into the food management program (including regulatory responses) as appropriate.

Policy Principle 7

ADFCA shall ensure service provision is coordinated, systematic and credible to the greatest extent possible

ADFCA is committed to providing its services in a professional, coordinated and coherent manner across the entire food chain in order to provide certainty and equity to food and feed businesses throughout the Emirate. This includes collaborating with other agencies responsible for related aspects of agriculture and food safety.

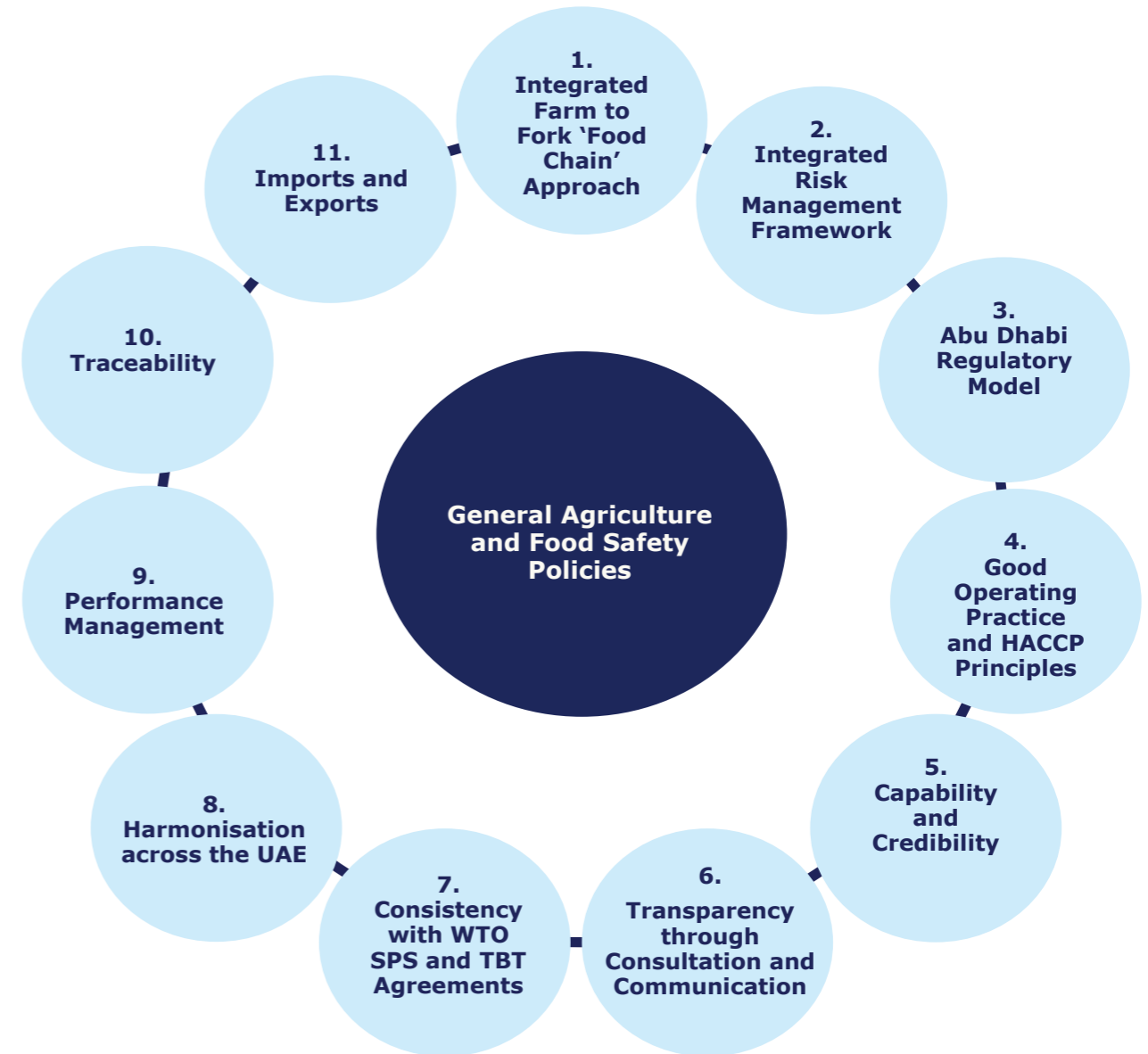
4. General Policies for Agriculture and Food Safety

To support policy development and the delivery of safe food, there are a number of general policies that are considered as the fundamental building blocks for the specific agriculture and food safety policies. The general policies guide decision making and underpin the sector-specific policies. These general policies apply equally across the food chain to both the agriculture and food sectors.

Integration of the Abu Dhabi agriculture and food sectors is enhanced with the development and application of cross-cutting general policies. The general policies have equal applicability across both agriculture and food and provide the basis for consistent government intervention when initiated.

The following diagram is a graphical representation of this section and the policies subsequently described:

Diagram 11: General Policies



Each of the General Policies identified below comprise the following:

- The ADFCA “Position” that sets out the core ADFCA view on the concept that is within the general policy area
- The rationale for choosing the option, the option(s) considered where appropriate and significance in a regulatory program
- A description of the general policy area selected, the concept encompassed and the key features.

4.1. General Policy 1: Integrated Farm to Fork (Food Chain) Approach

Position:

ADFCA adopts the integrated farm to fork ‘food chain’ approach as a means of ensuring coherence and integration of regulatory and non-regulatory risk management measures across the entire food chain.

Rationale:

The food chain is a concept that embraces food safety from the genesis of food through to its consumption. A food chain approach ensures that government intervention to address food safety and suitability issues and agriculture production and protection can be applied effectively at the point best able to deliver the optimum outcome for the purpose of consumer protection.

Description :

The concept of the ‘food chain’ approach is reflected in the use of the term ‘biosecurity’ by the Food and Agriculture Organization of the United Nations (FAO) to describe:

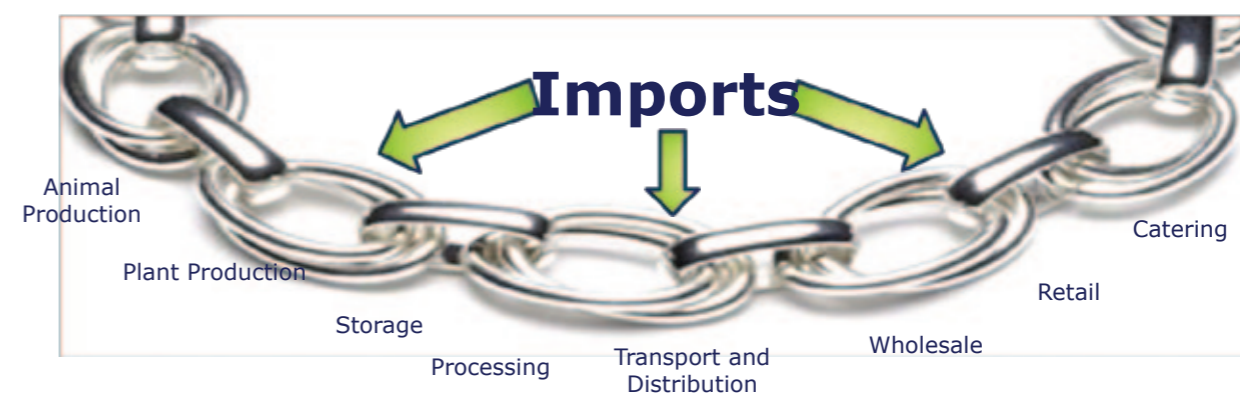
“a strategic and integrated approach... for analysing and managing relevant risks to human, animal and plant life and health, and associated risks to the environment”¹².

Such a strategic and integrated approach’ for dealing with risks presented along the food chain is achieved by developing a comprehensive and coherent set of policies applicable across the entire ‘biosecurity’ area – effectively across the ‘Farm to Fork’ or production to consumption food chain continuum.

The food chain covers all agricultural inputs and production of animals and plants, all processing, manufacture, transportation and distribution through to retail, catering in all its forms and sale. The food chain also covers all food imports and exports as shown the next page:

¹² FAO Biosecurity Toolkit (FAO, Rome 2007) p3. Note also that this definition is used by OIE.

Diagram 12: Food Chain



With its broad mandate covering the farm to fork continuum, ADFCA is in a unique position to deliver a world leading ‘biosecurity’ program in the widest sense of the word.

The potential risks to a country’s ‘biosecurity’ (food safety, animal and plant health and associated risks to the environment) and mitigating consequential risks from trade and commerce in animals and plants and their products as well as in production inputs (e.g. primary production, manufacturing and processing inputs), have been and will continue to be, key determinants of bilateral trade between countries. In this context, commitment to the World Trade Organization (WTO) and the Sanitary and Phyto-Sanitary (SPS) Agreement with the underlying standards, codes of practice and guidelines developed under the auspices of Codex Alimentarius, the World Organisation for Animal Health (OIE) and the International Plant Protection Convention (IPPC) are significant elements of a ‘biosecurity’ system.

In addition to improved provision of assurances for animal and plant products in commerce and trade, the goals of ADFCA will include the delivery of a consistent and efficient regulatory system to domestic and import/export-based businesses, and a rapid and integrated response to any biosecurity issues and emergencies arising throughout the food chain.

4.2. General Policy 2: Integrated Risk Management Framework

Position:

ADFCA’s Integrated Risk Management Framework, based on risk analysis, is an essential tool to provide a consistent approach for making decisions on any government intervention and action in response to animal, plant and human health related issues.

It incorporates and advances the components of the internationally agreed guidelines for risk analysis described in Codex and is consistent with OIE and IPPC approaches. The Integrated Risk Management Framework described below provides the approach that ADFCA will take in establishing animal, plant and human health control measures and in responding to health related issues.

ADFCA recognises that it must have a science strategy to prioritise its work within the relevant area, while ensuring functional separation of any risk assessment activities, along with scientific capability to manage the science-based aspects of application of the Framework.

Rationale:

The development of an integrated risk management framework is fundamental to the effective and internationally accepted approach to the identification of the need for, and development of, control measures in response to animal, plant and human health issues as they arise. The risk analysis (including risk management framework) approach has been adopted by the Codex Alimentarius¹³ and increasingly incorporated in member countries’ food regulatory programs as a means of improving effectiveness and optimising use of resources.

Description:

Development and application of an integrated risk management framework to relevant aspects of policy, legislation and issue management across the food chain in Abu Dhabi is a core part of ADFCA’s approach to managing risk. Information that is supplied to risk managers for decision-making on agriculture and food safety must be science- (objective and verifiable information on hazards) and risk-based to the degree practical (includes some knowledge of actual risks to human, animal and plant health). Risks might include those attached to animal feed, contaminants and residues and hygienic practices.

The risk management framework incorporates the components of risk analysis as described by both Codex and FAO to the extent necessary. It does not describe the mechanics of application but it does give primacy to the risk manager as having overarching responsibility for application of the framework.

ADFCA being the competent authority of the Emirate, is the risk manager, who takes the final risk management decisions, hence it is involved in all the steps of the risk management framework including assisting in provision of implementation tools, training and education.

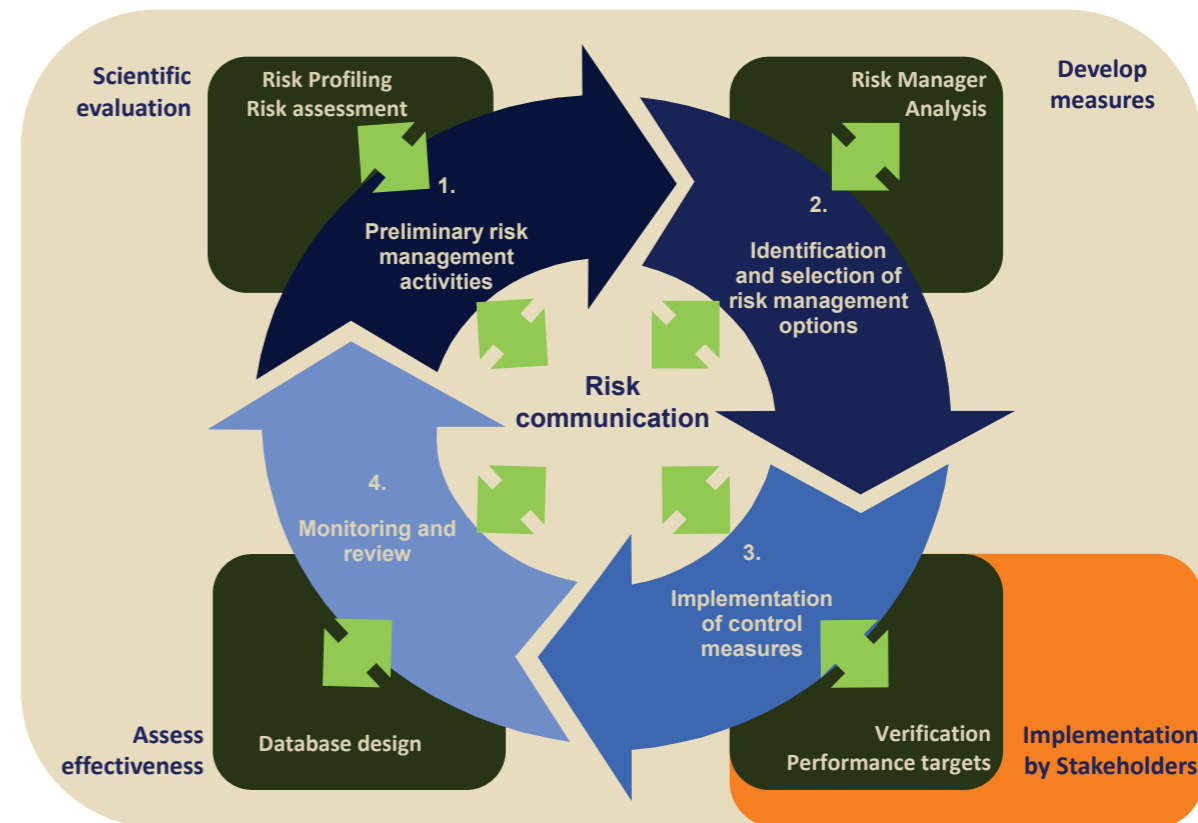
Effective management of risk deals with uncertainty by incorporating a precautionary approach in the absence of a sufficiency of scientific evidence upon which decisions are based and relies on appropriate risk communication and stakeholder representation at all steps. It is important that decisions made in the face of uncertainty (these will generally be complex particularly relating to risk expression), are rational, practical and based on scientific principles and that any precaution applied is appropriate to the circumstances. This may result in a temporary measure until more conclusive science is available. Transparency is a key feature of decision making and is particularly important where science and knowledge is limited.

The four key steps for applying the Abu Dhabi Integrated Risk Management Framework are:

1. Preliminary risk management activities
2. Identification and selection of risk management options
3. Implementation of control measures
4. Monitoring and review.

¹³ A risk management framework as advocated by FAO¹³ and Codex¹³, provides the process whereby science and risk based information, together with information on other factors relevant to national interests (such as the promotion of fair trade practices and economic implications) is used to choose and implement appropriate risk management controls.

Diagram 13: Integrated Risk Management Framework



The four steps of the Integrated Risk Management Framework all have elements of risk communication where information is shared and views sought with interested and affected parties.

In **Step 1** of the Framework, ADFCA:

- Identifies the safety issue
- Establishes risk management goals. For animal and plant related issues, this might be the appropriate level(s) of protection for the country, noting that to prevent an exotic pest or disease incursion, the target should be negligible risk. . It may also be the case where there is a risk management goal designed to achieve a pest or disease free area For human health the appropriate level of protection is rarely set at zero although for chemical hazards zero is approximated. The acceptable level for risk from microbiological hazards is dependent on the risk appetite of the Government and is characterised by the level(s) of risk deemed acceptable to the population taking into account the environmental realities (such as people movement across borders) and the probable endemic nature of the pathogen/disease in the human population anyway. In most cases the acceptable level of risk is what is reasonably achievable and this is generally described as ‘As Low As Reasonably Achievable’ (ALARA).
- Identifies the hazard and risk profiles for animals, plants or their products as appropriate
- Involves scientific evaluation and/or commissions a formal risk assessment appropriate to the issues where profiling does not give the necessary information
- Ranks and prioritises issues where relevant.

In **Step 2**, ADFCA:

- Identifies and selects the appropriate risk management option(s)
- Analyses and evaluates the options to find those that, either alone or in combination, will achieve the desired level of protection. Control measures may form part of the options
- Take into consideration other factors in the process such as acceptability to consumers and other stakeholders, consequences for international trade, consistency with government policy, compliance cost and other economic implications and practicality of monitoring, verification and enforcement.

In **Step 3**, ADFCA:

- Places the preferred control measure (i.e. risk management option) in place for stakeholders implementation
- Makes clear expectations of businesses in implementing the measure
- Understands its responsibilities in the implementation process and verifies application
- May set performance targets for assessing effectiveness of the control measure(s).

In **Step 4**, ADFCA:

- Monitors the food chain using a range of databases and information as available. This might include testing programs for animals and plants, imported food detailed trends, microbiological databases built up from data collected during processing, food residue surveillance data, total diet survey results and imported food monitoring data
- Uses the data collected to evaluate and review the effectiveness of the control measures that have been introduced or any other related ADFCA actions.

A sound scientific capability is important to ensure the risk managers are provided with high quality scientific and risk based inputs into their decision making. A science strategy to support the Integrated Risk Management Framework needs to focus on deriving benchmark data and risk profiling and risk assessments necessary both to accommodate the immediate and future needs of risk managers for the Emirate. Equally the strategy should cover the data requirements that can be used by ADFCA to measure the effectiveness of the measures chosen to mitigate specific risks. This would lend credibility to the processes undertaken by ADFCA and the resultant interventions.

Where risk assessment activities are undertaken, it is considered external to the framework to maintain integrity, objectivity and impartiality of the evidence base and avoid any conflict of interest. Hence ensuring functional separation between risk assessment and risk management activities, while maintaining dialogue and communication among those carrying out the activities, is a desired goal. Where risk assessment/scientific evaluation are conducted within the same authority, each should be carried out separately and shall be documented as such.

Animals, plants and a large proportion of their products in the form of food are imported to Abu Dhabi, and many of the related hazards/risks are similar on a global basis. During the medium term, ADFCA should focus on creating baseline databases such as pest and animal diseases and food consumption) and draw on the risk assessment work undertaken by reputable scientific organisations in other countries before investing in possibly duplicative work in Abu Dhabi, while partnering with Academia for any possible formal risk assessment activity.

The criteria that might be included in a Science Strategy for prioritising the components of the science program might include:

- Identification of key agriculture, food and population specific base line data, including the food composition and food consumption databases
- Areas unique to Abu Dhabi in the agriculture and science sectors
- Economic
- Environmental.

The selection of preferred risk management options will primarily involve a systematic evaluation of the likely impact of different safety requirements and standards on preventing, eliminating or reducing risks to health. Factors other than risks to health will be taken into account if relevant and appropriate (e.g. cost-effectiveness of a requirement), recognising that zero risk is rarely, if ever, attainable.

Application of a generic risk management framework allows decisions to be taken that are proportionate to the health risks involved, facilitates innovation and flexibility in application of requirements, and allows due regard to be taken of costs as well as benefits. Regulatory input shall be broad enough to encompass all relevant parts of the food chain and ensure that measures and requirements are applied where they will be most effective in reducing risks.

Risk-based systems (such as Food Safety Management Systems, local/emirate level regulatory programs, food handler guidance) may include regulatory and non-regulatory responses (where regulation is inappropriate and education and guidance may be a more effective option), standards, tools and associated actions taken by government.

Communication between those actively involved in dealing with safety issues affecting animals, plants and their products (such as risk assessors, risk managers) and with affected parties (e.g. consumers, groups within the industry sectors) is a critical component of all steps in the process. In many situations this will be risk communication that will involve the media.

4.3. General Policy 3: Abu Dhabi Regulatory model

Position:

ADFCA recognises the need for an efficient Regulatory Model to describe the core functions of ADFCA as the regulator that sets the requirements and as the verifier/inspector in relation to assessing compliance. The core functions of the agriculture and food sectors in meeting regulatory requirements and of consumers is also described in the model. This will result in broad ranging, generic regulatory and non-regulatory measures applying across the food chain as appropriate and specific measures for particular types and categories of agriculture, food and feed businesses. It also sets out the contribution of the Emirate to the international commitments and agreements and to effective participation in the development of UAE Federal requirements.

Rationale:

A regulatory model provides clarity and transparency around the functions that each of the key players (regulator setting requirements and verifying/inspecting, business operator (including farmer) and consumer) in the agriculture and food sectors performs and the inter-relationship between those players.

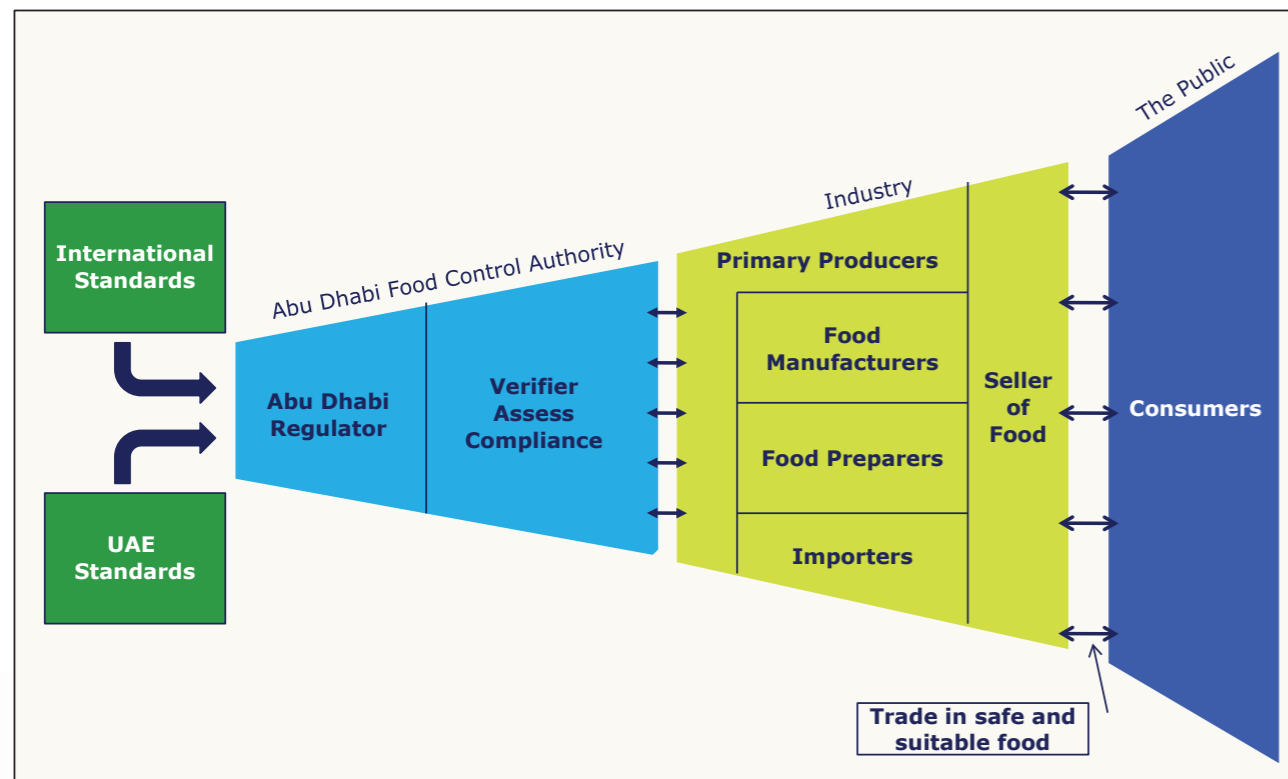
Description:

ADFCA will provide a cost effective and efficient regulatory program where farm/business operators across the food chain will ultimately take primary responsibility for meeting regulatory requirements and ensuring the safety of the food. The farm/business operators will be subject to inspection or verification depending on whether the particular sector is covered by a food safety management system or by the general requirements covered in regulation. Both verification and inspection involve assessing compliance with requirements. At the outset this will involve ADFCA «Food Officers».

ADFCA recognises that there needs to be an orderly transition in the food sector from the current «inspection» against prescriptive requirements based model to «verifying/auditing» farm/business operators against their management systems. This will take an attitudinal shift both within ADFCA and across the food chain and implementation will need to be considered on a phased approach depending on the maturity of the sector.

ADFCA will implement a regulatory approach that is simple, practical, risk-based, integrated and harmonised across the food chain and across individual groups within it. It will be responsive to, and supportive of, business needs and their levels of maturity and there will be consistent and equitable application of controls across all agriculture production and food businesses. This will accommodate the varying situations common in animal and plant production facilities and food processing and production (complexity, scale of operation, risk ranking etc.). It will also support and accommodate innovative solutions to health issues and provide for economically feasible initiatives to be developed.

Diagram 14: Regulatory Model



It is important that all aspects of the regulatory model are applied consistently and equitably. Consistency helps ensure farm/business operators across the food chain operate in a predictable regulatory environment and that implementation of the program does not create commercial uncertainty or competitive advantage or disadvantage to businesses in the same part of the sector. It is important that for the regulatory model to operate efficiently, duplication of activities exercised by the regulator/verifier/inspector should be addressed and avoided. Cost-effectiveness in application of any regulatory requirements is vital in order to streamline processes, reduce paperwork and minimise compliance costs. Similarly a seamless regulatory interface and appropriate regulator expertise/capability ensures regulatory impact and costs are minimised¹⁴.

The regulatory model provides the structure necessary for a risk-based approach from production through to retail and catering. The model requires ADFCA to set appropriate safety and suitability requirements recognising the role of the competent authorities at the Federal level and the trend to adopt Codex/OIE/IPPC standards when appropriate. Requirements set by ADFCA should not be prescriptive any more than necessary and should focus on performance criteria which focus on the outcome of a good practice that is expected to be achieved. While these can be difficult to link to the «appropriate level of protection» or «acceptable level of risk» that the government (i.e. regulator) might set or has accepted, in a risk-based environment these are feasible intermediary steps. ADFCA will avoid over legislating of good practice to the maximum extent, relying on the maturity of the sector, in order it can to provide flexibility for accommodating changes to good practice over time. Good practice should be a responsibility of farm/business operators.

Ultimately all business operators across the food chain will be expected to take full responsibility for producing products that meet all requirements using risk based management systems unless exempted. Exemption from the need to have a food safety management system might occur if another downstream food safety management system covers the exempted business or if the risks presented by the business are so low as to warrant non-regulatory measures. (e.g. An example of an area for exemption might be for livestock farmers. In this case, the processor of livestock (slaughterhouse) determines the requirements the business operator must meet to ensure that animals presented for slaughter are acceptable e.g. health and welfare status, feed composition and withholding periods for veterinary medicines applied).

The regulator will provide enforcement capability where farm/business operators continually fail to comply with requirements. Equally enforcement action will be taken against farm/business operators or others flagrantly disregarding the law and/or putting animal, plant and/or consumers' health at risk. Food Officers will conduct the investigations/proceedings necessary for the enforcement function.

Inspection (assessing compliance against prescriptive requirements) will continue for many businesses and sectors in the short term. The inspection model is therefore being enhanced through introduction of risk based approach in terms of the type foods produced and sold, method of handling, at risk consumers and the food business operators' performance in meeting all requirements. This will allow ADFCA Food Officers to focus on higher risk areas of non-performance.

¹⁴ Reflects characteristics contained in "National Regulatory Frameworks for Food Quality and Safety (FAO, Rome, January 2008).

Verification will also be applied by ADFCA to ensure that farm/business operators across the food chain have implemented their management systems thus complying with the requirements stated in the regulatory program. Frequency of verification above what may be a minimum level (possibly annual or biannual), is determined by the performance of each farm/business. This allows good farms/businesses to get on with their commercial activity and the verification function to focus on higher risk businesses and areas or poorer operators.

There will be an on-going higher level program to monitor compliance of farm/business operations with requirements on a national basis and identify trends in non-compliance that may jeopardise the integrity of the program and assurances of safety and suitability to consumers. Strict compliance by business operators with those requirements that represent risk-based targets for pathogen control will be particularly important.

Compliance data will be collected from inspection and verification, systems audit and complaint investigation activities. Trend analysis of this compliance data will provide information that can be used as evidence upon which to base statements of assurance and undertake appropriate risk management decisions.

These analyses also present a valuable mechanism to identify:

- Compliance issues requiring additional attention
- Opportunities to strengthen or initiate new requirements
- Changing risks from changes in food production practices and consumer food use patterns (as might be indicated by trends in data collected).

Cost Recovery as a Part of the Regulatory Model

ADFCA recognises that many countries recover costs of providing the program or components of the program. ADFCA also recognises that this is a national government issue and is not a necessary component of a functioning system. One important aspect of other countries’ programs where cost recovery has been used is as a commercial incentive relating to the inspection/verification function where frequency of inspection or verification is dependent on the food business operator’s performance in meeting requirements. ADFCA will identify other forms of incentive for promoting compliance by businesses.

4.4. General Policy 4: Good Operating Practice and HACCP principles

Position:

ADFCA recognises the importance of ‘Good Operating Practice’ including HACCP principles, in order to encompass best practice along the food chain whether that is agricultural, veterinary, manufacturing or hygiene. Good Operating Practice is also intended to encompass application of HACCP principles where necessary. The concept of Good Operating Practice is described as fundamental to a food control system but its limitations are also described as is its general applicability.

Rationale:

What has been traditionally considered to be ‘prerequisite building blocks,’ ‘HACCP principles’ and ‘HACCP steps’ have been packaged into a concept called ‘Good Operating Practice’ in order to present ‘good practices’ for farm/business operators without the complex scientific theoretical precepts that would otherwise be necessary. Many small busi-

nesses do not require traditional HACCP application but rather the use of HACCP-based systems. Where they do, the regulator is better placed to identify and set critical control points for incorporation in appropriate tools developed and delivered to farm/business operators along the food chain such as templates or codes of practice or guidance.

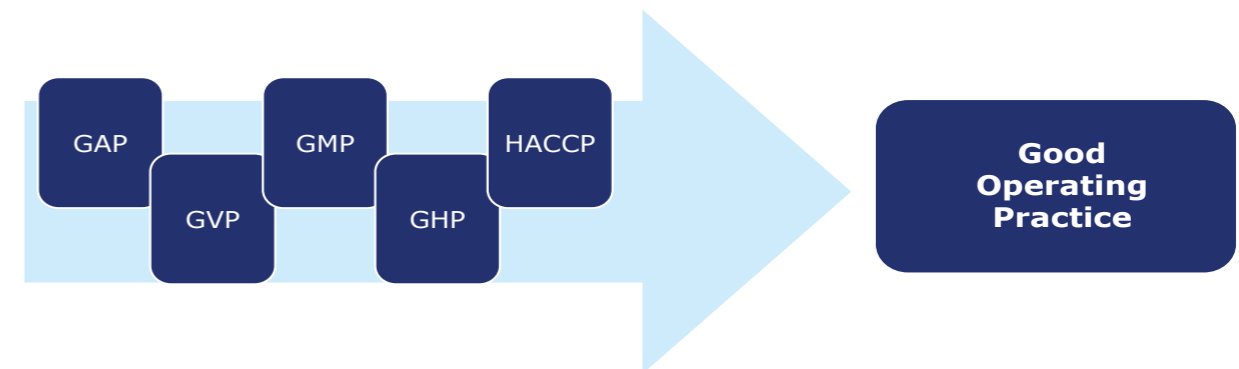
Description:

HACCP was developed in response to a need for a more science based approach to control hazards in food primarily in large scale food processing and manufacturing sectors. Such sectors already had highly developed base systems or ‘building blocks’. Yet, it does not translate well for catering sectors especially for small business and has tended to ‘over-engineer’ requirements when applied.

Small businesses are generally comfortable with an approach that has them being responsible for producing safe and suitable animals, plants and their products, but often they want to be provided with more guidance from the regulator and a practical and simple way that ‘meets’ requirements. Good Operating Practice meets this need.

It is recognised that the application of HACCP needs an underpinning of ‘good practices’ that take into account aspects of GAP (good agricultural practice), good veterinary practice, GMP (good manufacturing practice) and GHP (good hygienic practice). Good Operating Practice combines these, and HACCP, into a practical and operable risk-based food safety management system. This has been defined as ‘Good Operating Practice’ which builds in HACCP, where the regulator applies the HACCP principles, ‘critical control points’ are identified then specific risk-based controls are introduced by the regulator as an intervention or control step in the process.

Diagram 15: Good Operating Practice



A well-developed regulatory program will have the full range of tools available depending on the size and nature of the businesses involved. This will range from a large scale business operator, developing a tailored management system along HACCP lines or a full HACCP system with sophisticated validation steps and documentation systems, through to smaller businesses, working off a template jointly developed with the regulator, right through to the regulator providing educational food safety guidance as the sole means of regulatory intervention.

This applies equally to the farm as to food processing and food service. At the farm level, good agricultural/farming practice and good veterinary practice provide the farm owner/operator with a range of parameters and tools for ensuring the safety of the animals and plants as they enter the processing chain. This might also include the use of proprietary systems such as Global GAP.

4.5. General Policy 5: Credibility and Capability

Position:

ADFCA strives to achieve Credibility that enhances the confidence in the totality of the Abu Dhabi regulatory program covering the food chain. ADFCA is aiming to engender credibility by demonstrating it is a world class regulatory agency and ‘competent authority’ that has professionalism and integrity as cornerstones of its organisational culture.

Rationale:

Capability within or available to ADFCA is an essential part of a world class regulatory agency and critical to ADFCA’s credibility as a reputable and well branded ‘competent authority’.

Description:

For ADFCA to engender confidence in the totality of the Abu Dhabi regulatory program covering the food chain, it must demonstrate through documentation and practices that it is a world class regulatory agency and ‘competent authority’. For this, ADFCA aims at further building the capacity of its people to ensure they are knowledgeable in their fields, expert in their practices and fully understanding of the regulatory program covering the food chain. Training will provide evidence of competence. ADFCA’s processes will be based in well documented systems and with an active internal systems audit capacity. Professionalism and integrity will be cornerstones of ADFCA’s organisational culture.

ADFCA’s capability requirements will be influenced by the extent to which functions are undertaken by the authority (including the Farmers’ Services Centre) or by the private sector.

ADFCA recognises it must create, then operate within, a coherent agriculture and food policy framework that ensures responsiveness of the program to international regulatory (multi-lateral and bi-lateral) and trade developments. Confidence in ADFCA as a competent authority will rely heavily on its management and technical capability either in-house and employed by ADFCA, or available from research or other academic institutions under some formal or informal arrangement (and not necessarily within Abu Dhabi).

ADFCA’s ability to communicate effectively with its stakeholders and consumers and the public (through the media and other channels) will be of critical importance to building credibility where it counts. This will be more apparent in a major incident response or during a crisis management event.

As a part of the building blocks to generate confidence, ADFCA will also develop and maintain effective strategic alliances and networks and linkages outside Abu Dhabi. It will rely on building bilateral relationships, providing international leadership in food chain control(s) and associated technologies and contributing to federal and global information systems.

On-going performance measurement of the agriculture and food regulatory program’s implementation is a crucial component in demonstrating that the program is robust, comprehensive and working satisfactorily.

Regulatory performance relies a lot on maintaining and enhancing credible technical capability and risk management expertise as well as professional and competent services delivery. Integrity will be a key attribute sought when building capability.

4.6. General Policy 6: Transparency through consultation & communication

Position:

ADFCA recognises Transparency as a key feature of the government’s regulatory framework which will be achieved through deploying an efficient consultation and communication approach. Transparency is particularly important around decision-making in order to ensure that stakeholders understand the basis for the interventions and decisions affecting them.

Rationale:

Transparency is a key attribute of a national regulatory framework for government¹⁵ and has been identified as important to allow stakeholders across the food chain to contribute and provide a means for the regulator to explain the basis of decisions and encourage cooperation from parties affected by decisions. Transparency can be achieved through general consultation and communication.

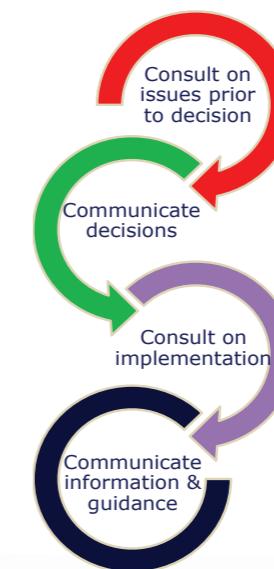
Such public participation involved a phased continuum which starts with basic Information exchange, into Consultation and Engagement dialogue, and further extends to Shared decision making, and Shared jurisdiction.

ADFCA currently is involved with the majority of its stakeholders between consultation and engagement dialogue within such continuum. Specific reference to risk communication is made in the General Policy on the Integrated Risk Management Framework.

Description:

The following and Diagram 16 describe consultation and communication in terms of their contribution to the transparency of the food regulatory program and ADFCA’s delivery across the food chain.

Diagram 16: Policy consultation and communication



¹⁵ Reflects characteristics contained in “National Regulatory Frameworks for Food Quality and Safety (FAO, Rome, January 2008).

4.6.1. Consultation

Stakeholders need to be involved to the maximum extent possible in the processes that result in:

- Determination of priorities within the Abu Dhabi agriculture and food regulatory program
- Decisions made at particular steps in the risk management framework that relate to “level of consumer protection”, or “acceptable level of risk” that stakeholders/ consumers or the government regards as ‘tolerable’
- Outcome based requirements/‘performance criteria’ or other targets broadly related to risk being set by ADFCA
- Design of generic or specific requirements for particular groups within the food chain, and criteria for assessing risk-based management systems
- Implementation of the regulatory program.

Consultation is required with the relevant stakeholders at all stages of the regulatory process/steps within the risk management framework. Stakeholders must have a chance to provide input into the regulatory process if they are to have any sense of ownership and commitment to meeting the requirements, or otherwise to gain confidence in ADFCA's regulatory program.

ADFCAs objective in consultation is to inform and initiate dialogue in decision making, build credibility and to gain acceptance and a sense of ownership of regulatory decisions for which it has accountability. Forums will be set up to achieve these ends, which may be of ad hoc or more permanent nature.

4.6.2. Communication and Informing Consumers and Stakeholders

ADFCAs recognises that effective communication with consumers and stakeholders generally, is essential to achieve the goals and objectives of the organisation.

To support effective interaction with consumers and stakeholders, in all communications, ADFCA will ensure that the views it expresses and the information it provides is:

- Based on sound science and risk-based where possible and appropriate
- Balanced and that actions/intervention taken are proportionate to the risks involved
- Fair and expressed without fear or favour for any particular sector or group
- Respectful in the views of others
- Understanding of the issues of risk and risk perception.

This will require that ADFCA's managerial and technical capability is reflected in staff that are competent and qualified with high levels of professionalism and integrity; committed to ADFCA's mission of protecting consumers; accessible and helpful; and able to share the concerns and values of other consumers.

A significant part of communication will be through consultation, developing feedback mechanisms and establishing dialogue with stakeholders.

Media management is a critical element of communications and relations with the media must be fostered and encouraged. ADFCA must have a thorough understanding of the realities of risk communication and ensure both its

website and other materials disseminated, are simple, forthright and targeted appropriately.

Communication is also of importance in informing the public of the steps they can exercise to mitigate risks. Given many food related illnesses can be attributed to the final consumer that handles food at home, consumer education is a very crucial and fundamental function for ADFCA. Approaching consumer education will be undertaken in various ways ranging from written materials to TV advertisements and direct interaction campaigns where ADFCA will continue to select the appropriate tools and avenues to the Abu Dhabi context (such as print media and announcements from political and spiritual leaders) that are capable of raising the awareness towards the aspired behavioural change of the consumer.

4.7. General Policy 7: Consistency with WTO SPS and TBT Agreements

Position:

ADFCAs realises that Abu Dhabi, as a member of the UAE, accepts its obligations under the WTO (Sanitary and Phytosanitary-SPS and Technical barriers to Trade-TBT) Agreements and the associated reference bodies: Codex, OIE and IPPC. ADFCA contributes to the Federal role in this area. At the local level, the regulatory program will be greatly enhanced by the relationships that the UAE, the Abu Dhabi Government and ADFCA build. Entering government-to-government arrangements are particularly important for an efficient and streamlined imports program.

Rationale:

The UAE is a signatory to the WTO SPS and TBT Agreements. The UAE is also a member of Codex, OIE and IPPC. These memberships carry with them obligations and benefits in terms of trade and fairness of treatment in the global trading environment.

Description:

The following sets out the obligations and commitments and response of Abu Dhabi in relation to WTO SPS and TBT arrangements.

4.7.1. Sanitary & Phytosanitary (SPS) Agreement

The SPS Agreement contains a number of elements and principles upon which the work of the international standard setting bodies is to be based and which must be taken into account when national authorities of the WTO Member Countries are developing and implementing their own measures.

These relate to:

- Appropriate level of protection where a country should strive to be able to describe the outcome it is trying to achieve
- Science and risk-based approach to setting requirements (Article 2.2 of SPS Agreement). The risk management framework and the work of the international standard setting bodies encompass this approach
- Transparency. While this is primarily related to bilateral trade needs, it has been shown (and is advocated by FAO) to be of equal importance within a country and of benefit to the relationship between the regulator and stakeholders including consumers.

- Regionalisation and the recognition that an exotic disease or pest is not necessarily constrained by man-made borders, and can expand across borders
- Equivalence and the acceptance that in international trade, individual countries may be able to achieve the desired outcome (appropriate level of protection) without necessarily replicating the importing countries own and often detailed and prescriptive requirements (Article 4.1 of SPS Agreement). Many countries have comparable levels of protection and similar but not identical regulatory programmes and it is possible to assess these programs and accept the entire or components of their program as equivalent. This is usually only possible where experience and knowledge gained through trade over a period of time leads to high levels of trust between the importing and exporting country and which results in resource optimisation, more credible safety assurances and trade facilitation.

4.7.2. Alignment with International Standards

International sanitary and phyto-sanitary standards covering the food chain and developed by Codex, OIE and within the framework of the IPPC, represent international norms and recommended guidelines for safety and suitability and are usually attained based on a global scientific consensus by risk managers within member countries. Such norms can be adopted in the absence of evidence that they would otherwise not be appropriate for Abu Dhabi. These provide reference standards for the Abu Dhabi agriculture and food regulatory program. ADFCA will significantly contribute to UAE commitment in applying the principles of the WTO SPS Agreement.

As the SPS Agreement identifies the work of international standards setting agencies and the standards produced by Codex Alimentarius, OIE and IPPC as the reference platform for the agreement and are expected to be aligned with these same principles. As a consequence, ADFCA will also continue to contribute to the UAE's participation in Codex, OIE and IPPC activities, and work with the federal entities as well as the other Emirates to promote the receipt and sharing of relevant draft papers, provision of feedback and development of positions on international standards. ADFCA will participate in and where appropriate lead UAE coordinating committees so as to support effective and contributory participation in relevant international meetings in accordance with the Emirate and UAE priorities.

ADFC will continue to monitor the international regulatory environment for trends in regulation and standards to enable continued 'best practice' within Abu Dhabi.

ADFC will also be cognisant, through UAE, of activities in the technical barriers to trade area (TBT) as these can impinge on ADFCA's activities and aspirations. Of particular significance are comments on such subjects as halal foods and the need to ensure a harmonised approach across the UAE, GCC and to the maximum extent possible other countries with similar requirements, so that trade is facilitated and suppliers can meet needs consistently.

4.7.3. Building Relationships with Counterparts

ADFC has a goal of managing the risks inherent in imported animals, plants and their food products and focusing resources on the imports that are likely to be of highest risk. Applying a risk based approach will not only mean

differentiating products as has been done, but will also mean differentiating origin source on the basis of the performance of the source country control systems and the credibility of the official assurances that the source country systems can provide. This will involve building relationships with counterpart agencies in countries which trade with Abu Dhabi and entering 'arrangements' appropriate to the deemed risk status of the source country's control system. Experience, knowledge and confidence in the relevant control systems of the source country of imported animal and plant product is an essential contributor to a balanced approach to judging comparability of a country's regulatory control system and enabling an assessment of its equivalence to Abu Dhabi's requirements. This will be achieved through thorough analysis of database information and associated trends and track history of various countries to determine priorities and most appropriate means

Building relationships between ADFCA and counterpart regulators will also have the benefit of providing for information exchanges in relation to advancing regulatory thinking and processes. This will enable ADFCA to maintain best practice and will also enable exchanges of intelligence on imports and risk on a product/source country basis.

4.8. General Policy 8: Harmonisation across the UAE

Position:

Abu Dhabi and the other Emirates of the UAE collectively contribute immensely to the UAE meeting its obligations under the WTO SPS and TBT Agreements and the work of supporting, internationally recognised standard setting bodies. Nationally, the overall country level regulatory program will be greatly enhanced by the relationships that the Abu Dhabi Government and ADFCA build across the UAE. Entering emirate-to-emirate arrangements (where applicable) are particularly important for an efficient and streamlined programs.

Rationale:

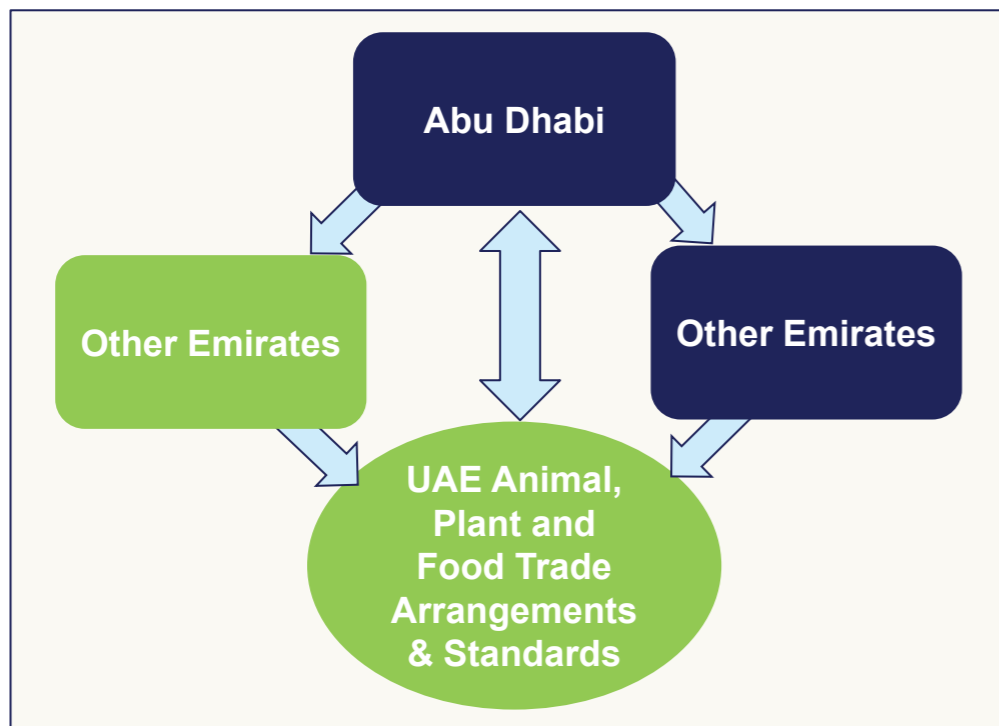
The UAE, as a signatory to the WTO and therefore the SPS and TBT Agreements and a member of Codex, commits the member emirate states to meeting the obligations of those Agreements. The Emirate states of the UAE therefore need to ensure their approaches to agriculture and food safety and suitability are harmonised in order to deliver on those obligations.

Description:

Abu Dhabi belongs to the federation making up the United Arab Emirates. As such, its sovereignty is affected in terms of many safety and suitability standards where these will be set at the federal level. Equally, inputs by Abu Dhabi into the work of the multilateral agencies may be limited where UAE wide requirements have been set federally. ADFCA will endeavour to influence positively the setting of strategies and regulatory model requirements at the federal level and further ensures that the requirements set are in harmony with ADFCA's vision and mission. There will undoubtedly be pressure to harmonise requirements to a greater level across the country and ADFCA strives to contribute substantially and constructively in this process.

ADFC will endeavour to continue building strong relationships within Abu Dhabi relevant authorities and trading partners but equally is required to have strong relationships with the competent authorities in other emirates.

Diagram 17: Harmonisation in the UAE



Given the high level of animals, plants and their products imported and the open movement once within the UAE, it is important that there is consistent application of a structured risk based approach to imports policy particularly in relation to specific product/source country combinations.

It will only be after implementation of such an imports program, based on building confidence and negotiating ‘arrangements’ with source countries, receiving official assurances from their counterpart ‘competent authorities’ in those countries, that ADFCA will gain the confidence necessary to manage imported products effectively.

Consistency in application of requirements for business operators across the UAE is also important in terms of equity between such businesses and ensuring such businesses compete on a ‘level playing field’. More important, however, is ensuring that all the emirates within the UAE are applying requirements in harmony and consistency particularly in relation to imports of animal and plant and its food products.

4.9. General Policy 9: Performance Management

Position:

ADFCA acknowledges that Performance across the food chain is a measure of its accomplishment against the desired objectives. As such, ADFCA’s performance measures include those identified at the organisational level as well as more specific measures set on the sector level. Where practical and appropriate, ADFCA will define specific food safety objectives to deliver more explicitly on the high level outcomes.

Rationale:

The goal in establishing a performance management system is to develop systems, criteria and evaluation tools to measure overall performance and achievements accomplished within the set outcomes and the aspired vision. ADFCA will be able to report to the wider government and to industry and consumers on the performance of the sectors in the food chain.

Description:

The underlying principles of a performance management system include the following:

- Performance information may be quantitative (measurable) or qualitative (subject to rankings and judgment) and must be collected and used in a systematic manner
- Performance measures can be both outcome-based and output-based
- Performance measurement systems should be SMART – simple/specific, measurable, achievable, realistic/results-focused and time-limited
- Performance should be measured in the context of agreed time lines, including achievement of interim goals as the system matures.

Performance management across the food chain involves eight key steps:

1. Identify and agree performance indicators to be used for assessing the performance of the regulatory program – set the things to be measured
2. Identify the implementation sequence of the performance monitoring system – it is neither feasible nor practical to measure all aspects at the outset
3. Set targets for the things to be measured – the desired changes
4. Establish evaluation methods and tools
5. Measure the starting point/baseline in each target area where practical and appropriate
6. Collect, examine and analyse data
7. Check progress in the desired changes – report on interim performance and results of trials
8. Act on the results (e.g. review the food regime and make any changes needed).

Each of the agriculture and food sectors will have performance measures developed and reported in order for ADFCA to be sure its policies, measures and actions are delivering on the strategic objectives.

In identifying performance indicators in the food sector, these are either Ultimate (long term), Intermediate (medium term) or Immediate (short term) measures/outcomes.

These are defined as follows:

- **Outcome based (Ultimate)** - these measures are typically considered over a longer term (4-5 years) and represent an overarching goal of the food safety regime e.g. measurement of food borne illness.
- **Output based (Intermediate)** – these will normally be measured over a shorter period (2-4 years) and provide a relative indicator of an ultimate outcome e.g. quantifying the level of hazard control in the food chain.
- **Activity based (Immediate)** – these will be measurable in the short term, usually 1-2 years and they will often be used to measure the results of a specific activity or intervention. They can only be indirectly associated with intermediate and ultimate outcomes.

4.10. General Policy 10: Traceability

Position:

ADFCA recognises that product traceability is an important part of delivering on transparency and information needs throughout the food chain and can be vital during incidents (such as where recalls are necessary or relevant disease outbreak). ADFCA endorses the Codex and OIE principles of traceability and acknowledges its international obligations for its traceability systems to be justified in terms of protection of animal, plant and human health. These all rely on the concept of the 'one step forward, one step backward'. Furthermore, ADFCA shall continue the on-going work on the application of its animal identification and registration system recognising that this is the foundation of a more complete and holistic traceability system.

Rationale:

Product traceability and associated labelling can be key tools for responding to demands for transparency, for dealing with incidents and for satisfying information needs on food at the time of purchase. It should only be necessary for any one person/business in the food chain to hold information about where the product came from and where it was sent to (i.e. information one step forward and one step back in the food chain).

Description:

The purpose of traceability and trace-back essentially falls within three areas:

- 1. Risk Assessment:** Within the food and animal feeds context, sources of risk can occur at three stages: origin; point of supply; or during processing. The relative importance of each of these will determine the extent of traceability or trace-back necessary in relation to the particular product and also who is to be responsible for providing or holding the relevant information.
- 2. Recall Procedures:** To provide the ability to retract any unsafe or non-conforming products from the market.
- 3. Market Eligibility:** Market access requirements imposed by many importing countries can, and do, require countries to provide official assurances about product identity and integrity. Such assurances call for traceability systems to be in place.

In principle, traceability systems must be justifiable in terms of protection of animal, plant and human life and health, and be in keeping with the provisions and principles of two WTO Agreements, the SPS Agreement and the TBT Agreement, as well as other multilateral agreements. Key in terms of the SPS Agreement is the need for requirements to have a scientific basis, to be based on relevant international standards, to be non-discriminatory and not used as disguised barriers to trade, and to recognise equivalence. In the case of the TBT Agreement, national regulations must be no more than necessary to fulfil a legitimate objective (Article 2.1 of the TBT Agreement).

The key provisions in these WTO agreements relevant to traceability are:

- The need to ensure that the national measures are scientifically justified (Article 2.2 of SPS Agreement)
- Base national measures on relevant international standards, where these exist, unless these do not meet the country's appropriate level of protection (Article 3.1 of SPS Agreement)
- National measures must be non-discriminatory and not used as disguised barriers to trade (Articles 2.3 and 2.4 of the SPS Agreement)

- Recognition for the concept of equivalence (Article 4.1 of SPS Agreement).

As regards other multilateral agreements, of particular relevance for traceability is Article 18 of the Biosafety Protocol regarding handling, transport, packaging and identification of living modified organisms.

OIE has identified the need for traceability systems in agriculture to: help producers and the institutions that support them to manage their animals more effectively; implement herd/flock management and health programs; apply breeding or genetic improvement programs; respond to disease outbreaks; address disease prevention through measures such as surveillance, early detection and notification of outbreaks, rapid response, control of animal movements, and zoning or compartmentalisation¹⁶. ADFCA is applying an animal identification and registration system that will provide the opportunity to continue the traceability system beyond the farm and slaughterhouse/pack house through the processing and distribution sectors and eventually to retail.

The Abu Dhabi Animal Identification and Registration System (AIRS) provides for ear tags in young sheep, goats and cattle from one month and a radio identification chip to be inserted in camels. Implementation has assisted in providing an animal census for the Emirate. Future activities involve maintaining the tagging operation and recording the movement of animals, registering the birth and death/slaughter of animals as an on-going process and broadening the system operations to accommodate more food producing species such as poultry and fish.

The traceability for plants generally follows the approach taken for food. In the food area, Codex has determined a set of principles to assist competent authorities in using traceability/product tracing as a tool within their food inspection and certification system. Codex recognises that traceability/product tracing is a tool that may be applied, when and as appropriate, in order to contribute to the protection of consumers against food-borne hazards and deceptive marketing practices; and the facilitation of trade on the basis of accurate product description.

In the application of traceability in relation to foods and feed, the key trace back tools employed (at times for recall purposes) are:

- Supplier declarations that the raw material meets specified standards
- Inclusion of requirements (including audit) relating to supply of incoming material or ingredients in the processor or manufacturer's risk-based management system
- Batch identification
- Records of movement of material or products within and between different processing businesses
- Eligibility documentation or inventory records - information relating to the status of the material or product in relation to fitness for purpose and market eligibility which is transferred along the processor/exporter chain.

There must be strong justification in terms of consumer health protection for government to mandate traceability requirements; as such systems for non-safety related considerations have the potential to impose significant compliance costs, which are ultimately borne by consumers.

¹⁶ Editorial by Bernard Vallat, OIE, 4 April 2008.

4.11. General Policy 11: Trade in Agriculture and Food Products (Imports and Exports)

Position:

ADFCA supports the trade in agriculture and food products. ADFCA also recognises that the Emirate imports the majority of food consumed. As a result, effective measures and appropriate assurances are necessary to be in place to protect the health of its human, animal and plants population from risks associated with imports. ADFCA sets the food import measures cognisant of the Federal responsibility for agriculture imports, and ensures their efficient and effective application and that they meet relevant international obligations.

Rationale:

Trade in agriculture and food products is vital to the Emirate of Abu Dhabi. Control of imports ensures that agriculture and food products entering the Abu Dhabi farm and food supply chain is safe and suitable. Controls need to be risk-based and cost effective to optimise resources to the process and minimise costs that might be passed on to farmers and consumers.

Exported agriculture and food products are subject to requirements, if any, placed on them by the importing country. Assurances (such as certificates covering phytosanitary status, registration or analysis for various agriculture/food products along with certificates of origin and other related documentation) may need to be given by the exporting country government as to the safety of the exported agriculture/food products.

Description:

Key aspects of the import and export functions are described below:

Imports

Imports are categorised using two matrices:

- Risks presented by specific agriculture and food types
- Credibility of the agriculture production and food safety systems in the country within which the agriculture and food products are produced and the level of assurances.

Different agriculture and food products present different risks to the farmer and consumer. Abu Dhabi has recently deployed a risk based approach to food imports that is based on the inherent risks in foods and which will extend to include more specific risk factors (including country of origin, brand name, manufacturer and track record of the importer).

The credibility of the agriculture and food safety systems within which agriculture and food products are produced can be considered on a country-to-country level under an "Equivalency" concept, by assessing the control systems in place within a country.

The assessment of the status of imports considers three factors:

1. *The operational and technical requirements in place*

An assessment must be made and a decision taken as to whether these replicate, can be judged as "equivalent" or can be «recognised» as delivering the same or required level of risk controls in a broad sense. Many countries demand replication with their own requirements which can be quite problematic in trade usually because the requirements are often not risk based and describe processes rather than risk (or even hazard) based outcomes.

A usual starting place in trading with a country is to broadly accept agriculture and food products from them and run checks (using a risk based approach) at point of entry into the importing country. Often this will lead to a performance history being built up which may result in insisting that the exporting country replicate certain requirements of the importing country in order to achieve specific performance requirements.

2. *The performance of the program against the requirements*

This is traditionally assessed by checks at port of entry which is considered as the least sensitive means of control and can be inefficient.

Other means of control may involve visits and audits of the third country – either of their «competent authority» or of the specific establishments where the «competent authority» is not highly regarded. Yet, this can be a costly exercise unless the costs are recovered from the beneficiaries (importers).

3. *Other countries' experiences*

Some countries that have a relatively high «level of protection» require most countries to provide official assurances to the effect that their requirements have been met. Such countries also conduct inspections/audits of the exporting countries and are quite transparent with their findings. It is therefore quite simple to leverage off their controls when profiling third countries for food imports into Abu Dhabi/UAE.

The broad objective in risk profiling both agriculture and food products and the country of origin is to ensure resources are focused where there is the greater risk. This means focusing on some agriculture and food products and their associated countries' which may be different than the current agriculture and food risk profile. It is also possible to ask exporting countries to provide an assurance to the effect that the product exported to Abu Dhabi was eligible for export to another eligible country with a required level of protection.

Assurances and Arrangements

Assurances accompanying imports from another country would be issued by a competent authority and may comprise any or all of the following elements: assurance as to animal, plant or human health status, Halal status, eligibility for trade (such as in endangered species) etc.

Whatever the agriculture or food risk profile and the country profile, ADFCA's counterpart «competent authority» should be required to provide official assurances (including health certificates and phytosanitary certificate.) attesting to the safety and suitability of the agriculture or food products (including halal status of food – see Food Safety Policy 5) and any specific requirements that ADFCA may have placed on the agriculture or food product.

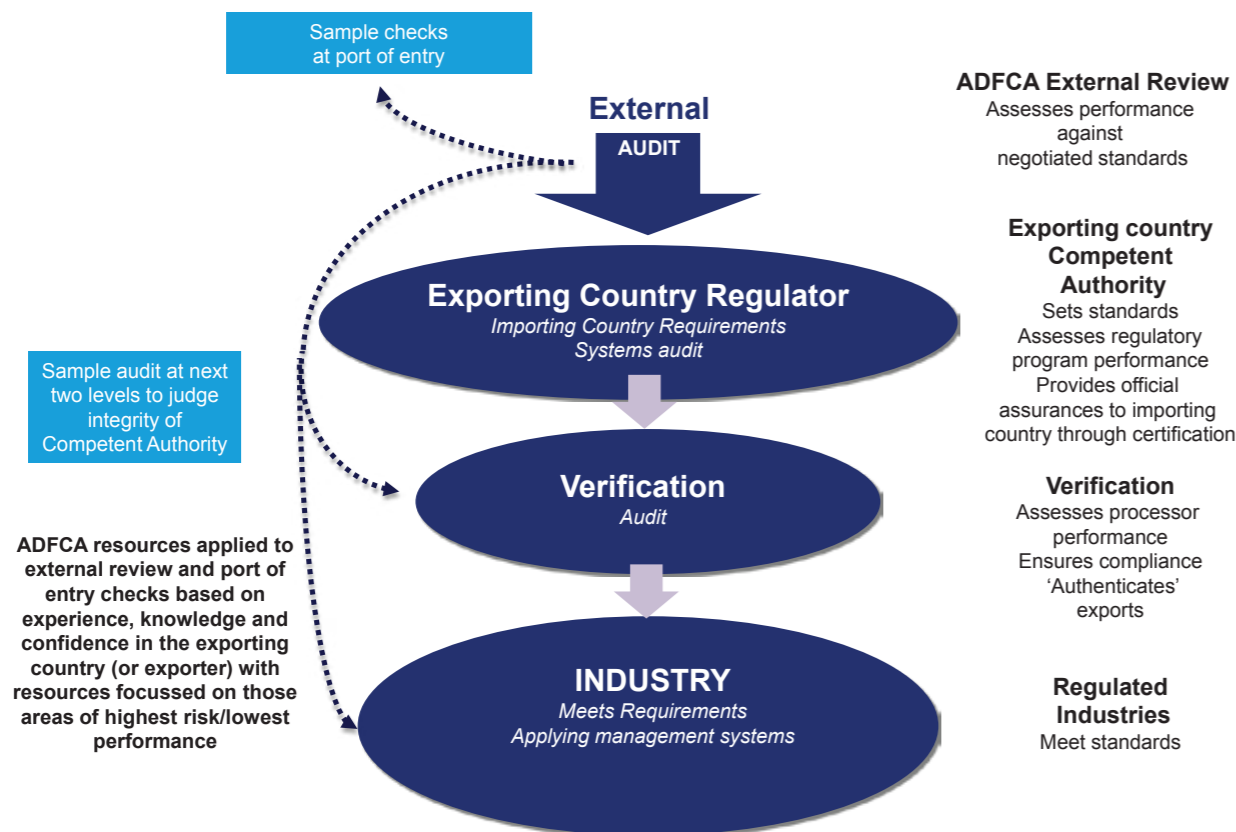
There are cases where something is wrong at the point of entry and the products do not meet ADFCA's specified requirements or the necessary assurances or food borne illness is attributed to imported food or animal health is impacted by imported feed from a particular country. In such cases, ADFCA is then capable of holding the competent authority in the exporting country responsible and requesting that authority to conduct appropriate investigations and provide explanations.

Many countries, having traded for many years without major problems, have entered into trade arrangements at a government to government level which allow for the reduction of levels of inspection at port of entry and reduced audits of the country's control program. ADFCA, on the Emirate level may consider entering in such bilateral arrange-

ments with the chosen trading partner. Such arrangements may be very formal and agreed mutually at a bilateral treaty level (generally described as 'Agreements'), or set as less formal arrangements or Memoranda of Understanding which, while set at a non-treaty level, are indicative of the relationship between the two countries and allow allocation of resources where risks are highest.

Many countries will only operate at a federal level so this may be difficult for Abu Dhabi/ADFCA to deploy this approach and will rely on harmonisation within the UAE. There is, however, a range of possibilities from the memorandum of understanding level right through to understandings between specific processors and the importing country competent authority.

Diagram 18: Key interfaces for import/ export assurances



Fraud is a valid issue with agriculture and food import documentation with many instances of fraudulently prepared and signed «official certificates» attesting origins and that the importing country requirements have been met. This is usually done to reduce inspections at port of entry and possible rejection. Hence, ADFCA endorses the electronic certification of issued certificates by the competent authority of the exporting country and encourages and accepts E-cert documentation as part of the imports program.

Federal vs. Emirate requirements – Given the common border within the UAE, it is important that there are common

requirements across all Emirates that are aligned with best practice and implemented consistently. The former will require considerable efforts from ADFCA to provide appropriate inputs at the Federal level and encourages emirate-to-emirate collaboration.

Exports

Assurances are an exporting country's attestations as to the product being exported. It requires systems and controls in the exporting country to allow the assurance to be given with confidence and certainty. The integrity of the systems relies on the competent authority's checks of the system and the exporting business's recognition of their responsibility and commitment to export.

Ideally, production systems for local farmers and consumers are the same as for export production. Sometimes more requirements are placed by importing countries on an exporting country's production. When this occurs, system additions and controls must be added by the exporting business and the exporting country's competent authority.

Assurances are most effective and efficient where the industry has taken responsibility for producing safe and suitable agriculture and food products and has a verified system. The exporting country competent authority audits the overall system and advises each of the businesses of their status within that system. The exporting country competent authority also exercises compliance and enforcement actions as necessary to maintain confidence in the export trade.

To avoid possible fraudulent use of ADFCA assurances/certificates, electronic certification of exports should be provided for those countries accepting this advanced technology.

In relation to re-exports from Abu Dhabi, there are three possibilities:

- Imported foods that are used to make other food products for export
- Non UAE foods that transit the country
- Non UAE foods held in free zones and/or further processed prior to export.

ADFCA must ensure the integrity of the Abu Dhabi assurance system is maintained at all times. This means business operators' must fully comply with all standards necessary for the export of safe and suitable food from Abu Dhabi. Only then can ADFCA issue assurances as to the eligibility of the product to meet the importing country's requirements.

5. Agriculture Policy Framework and Policies

The policy framework is the inventory of policies required to deliver a sound agricultural sector in Abu Dhabi. These policies form an integrated package contributing to a sustainable agricultural sector focussing on production and protection aspects. There is also complementarity of these policies with the overarching General Policies and the Food Safety Policies.

5.1. Introduction

The Emirate of Abu Dhabi has a history of agriculture involving oasis farming and animal husbandry for food, transport and recreation. Broadening the farming and animal husbandry activities and enhancing them so that they make a sustainable contribution to the food supply into the future is the medium to long term goal of ADFCA.

Agriculture policies inform and contribute to the setting of whole-of-government, long term directions. They are critically important for ensuring the agriculture sector contributes to the economic, environmental and social benefits and goals desired by Government.

Agriculture policies assist in priority setting and in the selection of specific initiatives and programs to be progressed to set a path of sustainable growth of the sector and for this to be a tangible contribution to the Abu Dhabi food supply.

In order to ensure effectiveness, the agriculture policies:

- Are forward looking and in some cases aspirational
- Contribute to fulfilling international obligations of the UAE
- Are benchmarked to internationally recognised best practice
- Will promote economic, social and environmental sustainability
- Form the building block for a vibrant and competitive contribution to the food supply
- Complement the food safety policies and interface with the general policies
- Are effectively promoted to, communicated to and embraced by the agriculture sector
- Provide for a sequencing of development that takes account of constraints and opportunities within the sector
- Provide the best possible environment for investment to occur with the outcome of increasing productivity and contributing to food security
- Provide directions on production diversification and intensification
- Are tailored to the Emirate of Abu Dhabi situation, as well as the case in the food safety policies in the next chapter allowing both for innovation and creativity so that results are recognised as 'best practice' in the region.

Policy decisions in the sector have the overriding objective of ensuring the safety of the food that is generated by the agricultural effort and contributing to the security of the food supply. Every action taken on-farm and off-farm that impacts on agriculture must be aligned with this objective. This is the primary goal of the whole of chain food production system.

Enabling a strong and sustainable agriculture sector through providing the necessary decision making frameworks and programme support and controls is important. This is reflected in the application of sound policies and the implementation of the necessary programmes and decisions subsequently made.

5.2. Agriculture Policy Framework

The general policies apply to both of the agriculture and food safety areas (e.g. risk management applies to the ways both agriculture or food safety issues are addressed) and are complementary. The Agriculture Policy Framework complements this and is the summation of all the agriculture policies that are required to achieve the objectives and aims of ADFCA relating to agriculture.

The agriculture policies identified below include two major policy areas: production and protection. Several policies are common to and support the major policy areas:

The two major policy areas of production and protection each comprise a series of policies to cover the breadth of that area:

- Agriculture Production:
 - Agricultural Land Use
 - Agricultural Water Use
 - Production Choices
 - Economic Sustainability
- Agriculture Protection
 - On-farm prevention measures
 - Pest and Disease Control
 - Regulated areas for pest and disease management
 - Emergency preparedness and response
 - Preservation of valuable agricultural species
 - The common and supporting agricultural policies are:
- Research and Development
- Social Support
- Agriculture compounds
- Animal welfare
- Competencies and on-farm capabilities
- Compliance, offences, penalties and enforcement.

As with the General Policies, each of the policy areas comprises the following:

- The ADFCA "Position" that sets out the core ADFCA view on the concept that is within the policy area
- The rationale for choosing the option(s) considered where appropriate and significance in a regulatory programme
- A description of the selected policy area, the concept encompassed and the key features.

Diagram 19: Agriculture Policy Framework



5.2.1. Agriculture Production

Production relates to the activity of growing, rearing and producing animals or plants raw material for entry to the food chain. It is a complex business, requiring knowledge in many areas (such as biology, animal husbandry, health and welfare, agronomy, mechanics, and marketing) and covering a variety of operations throughout the year.

The potential environmental concerns related to agriculture operations and best management practices recommended to minimise environmental problems are covered in the first two policies, Agricultural Land Use Policy and Agricultural Water Use Policy along with the other related policies.

Success in the agriculture sector is very dependent on choices the farmer makes concerning what to produce for the food chain – animals and whether that is for meat or other products such as milk or honey and – crops and whether that is fruit, vegetables or feed or a combination. Factors influencing product choice are covered in the policy Production Choices.

Success is also dependent not only on the ability of the farm to be economically viable but also to be economically sustainable. While this is interlinked with environmental and social sustainability, a policy on Economic Sustainability identifies the necessary factors and inter linkages.

Investment in agricultural research and development, tailored to the Emirate of Abu Dhabi’s needs is a fundamental building block of the agricultural sector. Necessary research need not all be conducted by ADFCA but ADFCA needs to provide the leadership and coordination in this area for the Emirate of Abu Dhabi to fully realise its innovative abili-

ties and productive capacity. A framework for this purpose is contained in the policy on Agricultural Research and Development.

Finally, agriculture in Abu Dhabi generally and production specifically have both been the recipient of social support over a lengthy period of time. Decision making in this area in the future will be critical to incentivising the right behaviours and compliance. The decision making process is described in the second Common Policy: Social Support.

5.2.1.1. P1 - Agricultural Land Use

Position:

ADFCA has responsibilities for land that is used for agriculture and recognises that for agriculture to be sustainable, the land should be able to support the relevant activity, the activity must not degrade the soil further and the activity must deliver positively on the objective sought for the land use. Decisions on land use will be made using the consistent decision making framework utilising the impact assessment process. Decisions on land use will require consideration of scale of activity for sustainability but the objective should always be optimal usage. Waste management from agricultural activities will also impact on the land.

ADFCA is committed to actively pursuing inter-agency coordination on issues related to land. This is in recognition of the broader Abu Dhabi government and Federal interests and responsibilities in this area.

Rationale:

Agricultural activities involve use and exploitation of natural resources one of which is land. Policy is required to deliver land use decisions in the future within a framework that considers environmental, economic and social sustainability. Agriculture makes significant demands on the land within the Emirate. Past decisions in relation to land allocation are now key factors in future decision making. Application of a policy framework ensures consistency and transparency of decision making.

Description:

Agricultural land use patterns have been shaped by significant Government intervention and social support over a lengthy period of time. Future decisions on land use need to be made with the best available information and data and within a policy framework that has as its objective environmental, economic and social sustainability.

For example, where land is used for agriculture, it has to be managed in such a way that leads to sustainable production over time and avoids, or minimises to the greatest extent possible, negative environmental impacts. This might mean, for example:

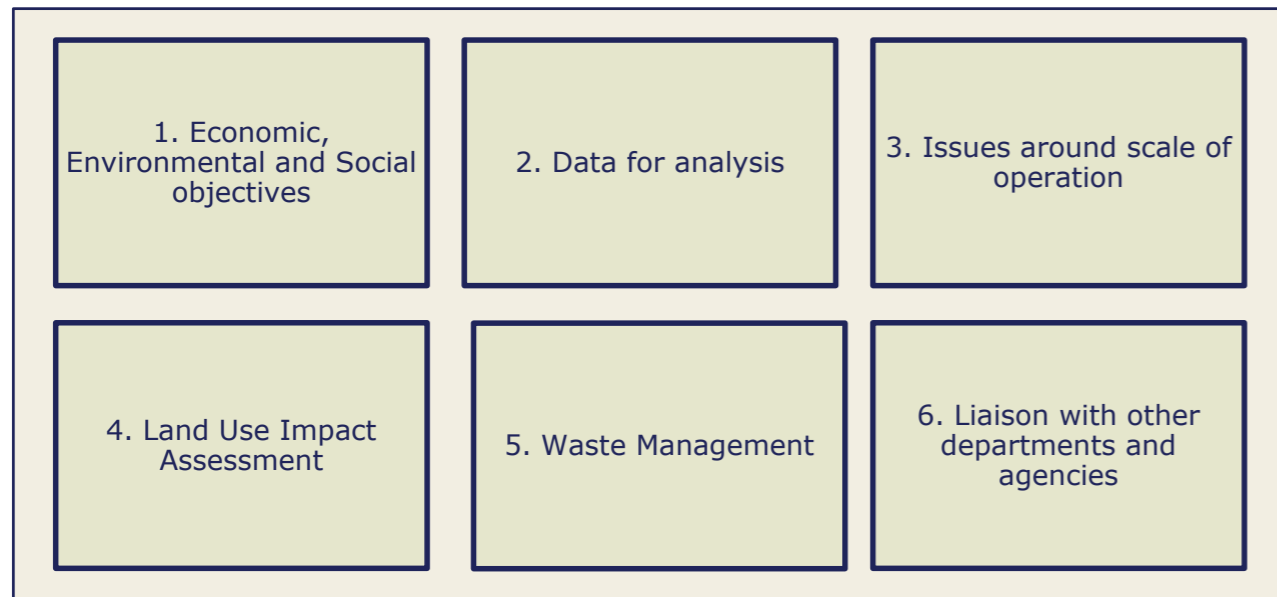
- Advocating for and formulation of natural resource management plans and environmental action plans
- Determining land capability and carrying capacity
- Replacing nutrients extracted from the soil (such as through the use of fertilisers, animal manure and mulching)
- Reversing soil degradation and managing on-farm grazing (such as through good crop and animal husbandry practices).

There will always be competing uses for land. As a result, conflict amongst the economic, environmental and social sustainability objectives are likely to be a reality. In such circumstances, a clear policy that deals with competing ob-

jectives for agricultural land use will greatly assist future decision making. As well, implementation of the policy may well see current land use change.

This policy specifically covers the areas outlined in the following diagram.

Diagram 20: Agricultural Land Use Policy Coverage



Economic, Environmental and Social objectives

The decisions on economic, environmental and social sustainability are inter-related and difficult. Economic sustainability and social objectives may be short, medium or long term objectives while environmental objectives may need satisfying in the short term in order for longer term sustainability to be realistic. Social objectives may be accorded higher priority by Government than economic success.

The Abu Dhabi Government has stated that it desires “economic diversification, sustainability and distribution throughout the regions”¹⁷. A sustainable agricultural sector will contribute to this goal and the economic, social and environmental aspects of agriculture need to be addressed on a case-by-case basis. For example, if social sustainability means ensuring land allocations remain as allocated (even where there is very little or no interest in agriculture from the farm owner), this has the prospect of limiting the sector’s economic sustainability. This would particularly be the case if investment in agriculture was reliant on broader farm ownership to support larger scale agricultural activities.

Farm owners are often absent from the farms. This does not remove them from responsibilities and obligations on land (and water) use or from activities undertaken on the farm such as animal husbandry or the use of pesticides. These responsibilities and obligations are only likely to increase in the future in order to realise Government’s objectives for agriculture.

¹⁷ P8 Abu Dhabi Economic Vision 2030, November 2008.

Data for Analysis

Vital for land use decision making is the work that was completed by EAD in May 2010 and contained in the Abu Dhabi Soil Survey Report, May 2010. This information includes data on soil type, current use and salinity which are key data inputs for undertaking land use impact analysis.

Other data sets might include costs of production for the proposed agricultural activity, costs of alternate sources of the farm production, investment patterns for the proposed activity and description and evaluation of the activity that might have been conducted elsewhere.

Issues around Scale of Operation

Currently, most of the 24,000 farms in the Abu Dhabi Emirate are around 2-3 hectares in size. Other than for a very small number, economic viability of the individual farms is unlikely given the limitations and cost of delivering services and inputs and the skill level of the farmer and farm worker. The Impact Assessment may need to consider scale of operation depending on the objectives being sought.

Land Use Impact Assessment

Land management and future decisions on land use requires land use impact assessment that draws on a range of factors, applies criteria based on defined objectives and provides an overall analysis and assessment of the proposed use. This is sometimes called the triple-bottom line approach whereby economic, social and environmental aspects are assessed. There are many tools and guides available for this purpose but generally the process follows a step wise approach. Evaluating competing objectives is always complex especially where aspects cannot be quantified. Nonetheless, at the core of such activity is cost benefit analysis that considers economic, environmental and social factors. A land use impact assessment (decision making framework) should utilise the risk management framework and would then cover the following:

Diagram 21: Land Use Impact Assessment



Step 1:

Gathering status information about the proposed activity and related data on the land intended to be used. Proposed activity:

- Is the proposed activity a new agricultural use or a continuation of existing agriculture?
- Who is affected by the activity and are there special aspects related to these people that need consideration?
- Is there financial data on the activity available or could this be generated?
- Has the activity succeeded in the past in the Emirate or in UA? If so what data on it is available?
- What water and other inputs does the activity require?

Land proposed for use – the geophysical features:

- Is the land already in agricultural use or has it been?
- Has past agricultural use been economically and environmentally sustainable? If not, describe features of concern. If it has, describe features of success
- Is it in an area allocated for agricultural use by the Urban Planning Council?
- Is there data on topography, soil structure and pH and sub-surface geology such as might be contained in the Abu Dhabi Soil Survey May 2010 relative to the region. If so, is there also information on the prospect of it being likely to support the proposed activity?
- Is there data on the occurrence of extreme weather events that could impact on the physical resource such as sand storms?
- Is there data on dispersal and dissipation rates of pollutants by air, water, sediments, agricultural waste or compounds and of unplanned events (spills or leakages)?

Clarifying objectives and outcome being sought:

- Is the activity designed to be economically sustainable and generate income for the farm worker and farmer?
- Is the activity intended to fulfil a social function such as providing subsistence for the farm workers and produce for the farmer?
- Is the activity environmentally sound, that is, is it efficient in terms of water use and agricultural compounds?

Step 2:

- Identifying and assessing options based on benefits, impacts and mitigation measures
- Weightings need to be allocated to factors depending on the objectives being sought. For example, if economic sustainability is the objective, then productivity and marketability of the produce would be key data inputs and given weightings over social concerns such as maintaining land holdings at the allocation size of 2 hectares
- Options are developed by assessing the inputs against objectives
- Selecting the preferred option – which would include not proceeding with the proposal.

Step 3:

- Implement selected option
- Identifying any implementation tools to influence behaviour, uptake and compliance with the policies
- Identifying indicators for the purpose of monitoring progress, results and performance.

Step 4:

- Monitoring, reviewing and amending as necessary.

The Impact Assessment can be as complex or as simple as is necessary. The larger the area to be covered by the Impact Assessment, the more complex the Assessment. Regional assessments are more complex than local assessments. This process is dynamic and may change over time. Since this policy is limited to application within the Abu Dhabi Emirate, Impact Assessment may be less complex than if applied at a UAE level.

Agricultural Waste Management

In order to improve and address waste management practices effectively and consistently, ADFCA needs baseline data on what the current management practices are and what currently comprises agricultural waste. The latter will certainly include by-product from agricultural activities such as prunings and animal waste as well as effluent discharges and other farm waste disposals.

Once this information is available, an assessment of gaps and improvements can be made in order to work towards best practice in the area. This will include integrated biosystems (reusing organic waste to benefit on-going agricultural activities such as compost for plant nutrients).

A key consideration in options for dealing with waste is cost – low cost options will be essential to address the waste from the 24,000 farms across the Emirate of Abu Dhabi.

Liaison with Other Departments and Agencies

Land use decisions cannot be taken in isolation by ADFCA. Two other key agencies have a core interest in such decisions: the Environment Abu Dhabi (EAD) and the Urban Planning Council (UPC). These three agencies (ADFCA, EAD and UPC) should be regularly working together in the area of land use. EAD and UPC will also be vital sources of information and data for any assessments undertaken by ADFCA. The Department of Economic Development may also have an interest as might the Ministry of Finance and Industry. ADFCA is committed to close inter agency liaison and consultation in the land use area.

5.2.1.2. P2 - Agricultural Water Use

Position:

ADFCA recognises that decisions, both public and private, concerning relevant aspects of agriculture require in-depth analysis of the potential impacts on water resources before such decisions are made. ADFCA supports a consistent decision making framework (impact assessment process) that addresses sustainable agricultural water usage and where efficiency of use is the key overriding outcome. ADFCA is committed to actively pursuing inter-agency coordination on issues related to water in recognition of the broader government and Federal interests and responsibilities in this area.

Rationale :

Agriculture is one of the largest users of water in Abu Dhabi. Past decisions in relation to many aspects of agriculture have distorted use patterns and impacted on source and quality of water over many years. A policy to guide future decision making is necessary where the decisions impact on water resources in order to ensure sustainable, efficient and equitable future use.

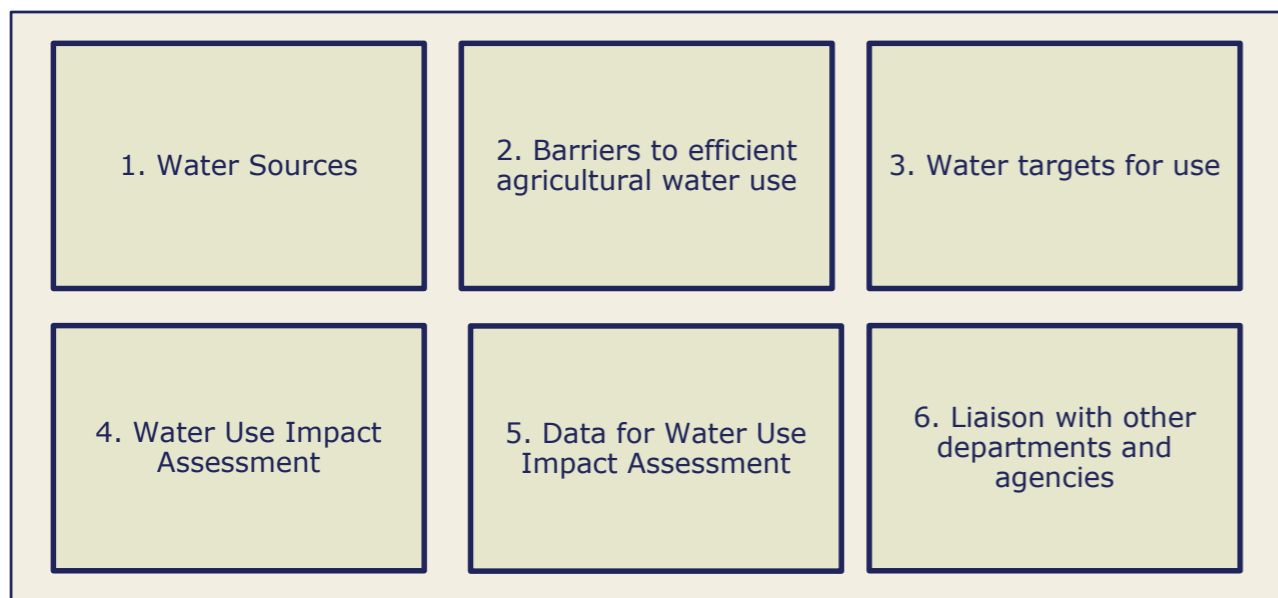
Description:

Since the 1960's water use in the Emirate of Abu Dhabi has increased rapidly¹⁸. Fresh water is a valuable and costly commodity in the Abu Dhabi Emirate. The lack of renewable freshwater resources means that alternative sources are essential features of the Emirate's total water resources. However costs are involved, financial, economic and environmental.

This policy specifically covers the areas outlined in the following diagram.

¹⁸ Abu Dhabi Water Resources Master Plan (2009, p18)

Diagram 22: Agricultural water Use Policy Coverage



Water Sources

Historically, agriculture has relied on ground water to meet its needs. Over time, however, pressure on ground water reserves through uncontrolled access (wells etc.) and use has resulted in rises in salinity and depletion of groundwater in some areas. The main alternative has been desalinated water but increasingly other alternatives that involve various recycling methodologies has broadened options but focussed the user on cost. By knowing the true costs of water supply, decisions can be made on competing demands and controls applied as appropriate. This may include controls such as the introduction of farm water quotas.

Barriers to Efficient Agricultural Water Use

Barriers to efficient water usage on farm include: poor pump, irrigation and other agricultural equipment, poor on-farm worker skills, distorting support programmes, water hungry crops/animals, existing poor water quality, intensive cropping/animal husbandry, inadequate agricultural water research.

Water Targets for Use

The annual consumption of water by agriculture in 2009¹⁹ was 25,814.57 m³/ha. The Abu Dhabi Environment Strategy 2008-2012 contains targets for the end of 2012 related to water resource management. One of these was to reduce annual water consumption in agricultural zones from 23,500 m³/ha to 18,000 m³/ha. ADFCA will continue to support future targets for agriculture water use as may be set.

Water Use Impact Assessment

The future sustainability of agriculture and further development requires water usage to be efficient, equitable and sustainable. Theoretically, agricultural sector proposals “would maximize economic and social benefits and minimize or even reverse adverse consequences to the environment”²⁰. Decisions on any form of agricultural social support,

¹⁹ Water Resources Master Plan of the Emirate of Abu Dhabi, January 2009, EAD.

²⁰ Abu Dhabi Water Resources Master Plan (EAD, 2009 p74).

technology application, land use and choice of production system and crop/animal must be made on the basis of an overall positive result from a water impact assessment.

A water impact assessment (decision making framework) can utilise the risk management framework and would cover the following:

Diagram 23: Water Use Impact Assessment



Step 1:

- Gathering status information about current and proposed activity and related data on the area intended to be used
- Clarifying objectives and outcome being sought.

Step 2:

- Identifying and assessing options based on benefits, impacts and mitigation measures
- This is done by comparing trade-offs including socio-economic and equity factors
- Criteria that might apply includes:
 - Volume of water required over set period
 - Quality of water required
 - Accessibility/source of water and infrastructure required to deliver water
 - Water application method and resultant water loss
 - Waste water/run off use and impact of non-use
- Real costs of the above.
- Selecting the preferred option – which would include not proceeding with the proposal.

Step 3:

- Implement selected option
- Identifying any implementation tools to influence behaviour, uptake and compliance with the policies
- Identifying indicators for the purpose of monitoring progress, results and performance.

Step 4:

- Monitoring, reviewing and amending as necessary.

Water impact assessments allow ADFCA to model the impact of social support and other pricing tools that might encourage more efficient water use and greater economic and environmental sustainability. This process is dynamic and may change over time. Examples of summary impact assessments are contained in the Abu Dhabi Water Resources Master Plan (EAD, 2009. pp77-79).

Water use impact analyses must take the barriers to water use into account as well as total costs of production including of water. Only by analysing true costs and benefits can decisions then be made on government support programmes related to water, whether these should continue and for how long. This needs to be addressed progressively by Government.

Conducting water impact analyses could require modelling therefore expertise within ADFCA for this purpose should be developed/obtained.

Data for Water Use Impact Assessment

One of the key barriers to effective impact assessment is data. Undertaking relevant data gathering activities and conducting related research as is appropriate to enhance the current information in this area are necessary activities of government. This can only be done effectively by liaising and coordinating across government departments to ensure any duplication is avoided and that related data needs are addressed if feasible, at the same time.

Liaison with Other Departments and Agencies

Water use decisions cannot be taken in isolation by ADFCA. Other agencies have a core interest in such decisions: concerned local agencies, the Environment Agency Abu Dhabi, and the Federal Ministry of Environment and Water. These agencies will also be vital sources of information and data for any analyses undertaken by ADFCA. The Economic department may well have an interest as might Finance. ADFCA is committed to close inter-agency liaison and consultation in the water use area.

5.2.1.3. P3 - Production Choices

Position:

ADFCA will ensure that decisions it makes on intervention in the agricultural sector concerning production choices will be subject to rigorous analysis to ensure that whether the objective of the intervention is economic, social or environmental, the impact of the intervention on production choice is neutral or positive on the natural and economic environment.

ADFCA will actively engage with farmers to support and promote sustainable decision making on production choices. ADFCA will ensure that robust decision making frameworks are developed and will facilitate consistent application of the framework by those making production choices.

Where decisions on production choices need to be made, whether by the private or public sector, ADFCA recognises that it has a key role in providing relevant agricultural data to assist in facilitating optimal decision making.

Rationale:

Decisions on the form of agriculture (crop and animal type, production system) that will deliver sustainability in a given situation require a consideration of a range of factors. The objectives of Government and the obligations of the farmer are key to making any decision. Without taking account of such factors, the decisions on the form of agriculture will be sub-optimal to the extent of impacting negatively on the environment and economy and consequently society.

Description:

Agriculture has grown rapidly over recent years. This growth has often resulted in negative impacts on the environ-

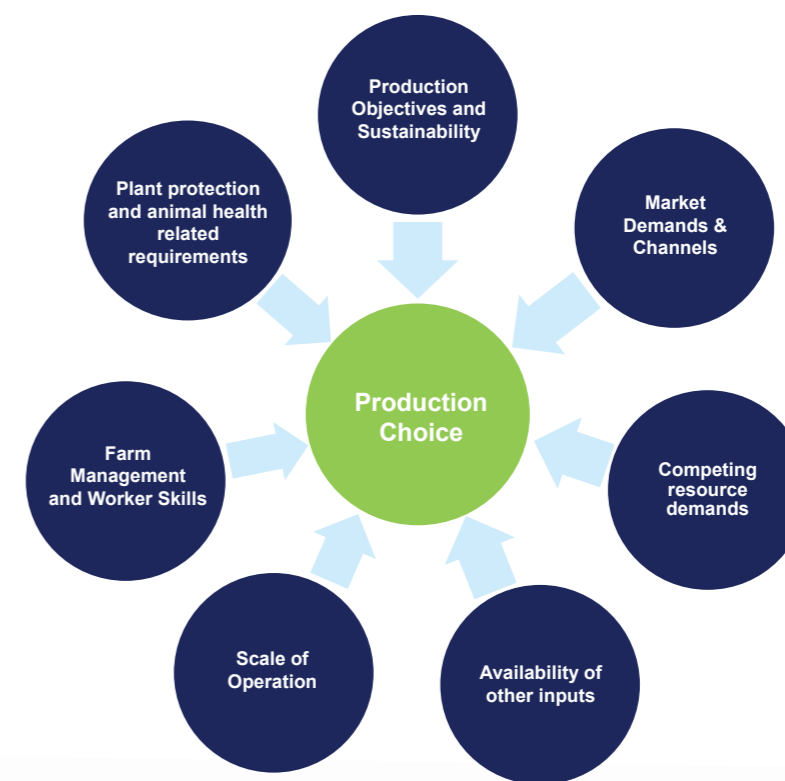
ment and economy. An example is the huge increase in the production of Rhodes grass. Taken in isolation from government intervention, careful seasonal production of such a saline tolerant grass might have been an attractive crop option for self-reliance. However, the opportunity to maximise returns from government support resulted in unsustainable production practices, choices and growth.

Factors in Production Choice Decisions

Decisions on crop and animal production choices will depend on several factors each of which is described in the following paragraphs:

- Objectives of production and sustainability (Government and farmer)
- Market demands and market channels (conventional, organic)
- Competing demands for land and water
- Availability of other inputs
- Scale of operation
- Farm management and farm worker skills
- Animal health and plant protection related requirements.

Diagram 24: Factors in Production Choice Decisions



Objectives of Production and Sustainability

Production choice is influenced by economic, environmental or social objectives of key groups. Sustainability requires the objectives of these groups to be neutral or positive over time. The key groups are:

1. Government: The economic, environmental or social objectives of government must be balanced in order to be sustainable. For example, if economic sustainability in vegetable production is an objective, water use must be within parameters set by EAD, land use must occur in viable production areas, and impact on farmers and farm workers must meet societal objectives.

Similarly, social support is government intervention aimed at achieving its objectives. A key application of social support is to ensure production decisions are optimised. To assess this, the impact of support on any one of the factors must be considered before reaching a decision, to ensure the social benefits outweigh costs/negative impacts on the environment and economy; and

2. The farm owner: whether an economic return is wanted, or supply of food for the family is required or there is no interest in agriculture; and

3. The farm operator: either the self-reliance or economic viability that without being satisfied would cause the farm operator to leave the sector.

A contribution to the economy that continues a negative impact on resources can do more damage to Abu Dhabi in the long run than not undertaking the activity. In such situations, monitoring, education, financial or physical deterrents and ultimately enforcement processes should discourage that activity. These might range from training in new production methods, cessation of social support or cessation of services such as water and power, to fines and publication of non-compliances.

The decision on choice of production is therefore heavily dependent on the level of Government involvement and commitment and objectives of the farmer. If self-reliance is the objective, the same factors need to be considered but the economic viability is neutral. If economic success is the objective, then economic viability must be positive to the extent necessary to deliver an acceptable level of return to the farmer.

The fact that many of the farm owners are absentee owners does not remove the obligation on them to make wise decisions about the agricultural activities conducted on their farm. In fact it makes those decisions more significant if their actions reduce or remove productive capacity from the system or place unsustainable pressures on resources.

Market Demands and Market Channels

Ideally the production choice should favour what the consumer is buying and what the market is therefore demanding. This may mean some producers choose organic farming (to meet consumer demand for organic produce) while others choose conventional farm production methods.

It may also mean choosing to produce genetically modified (GM) crops. ADFCA recognises the importance of alignment of this choice with the Federal Government regarding GM. Any decision on GM would be subject to safety assessments on such crops having been conducted by reputable agencies (UAE and/or international) for both environmental and food safety impacts. ADFCA may also need to address cost benefit of GM crops.

Influencing consumer purchasing, especially in relation to the purchase of Abu Dhabi produce over imported pro-

duce, requires not only attention to quality and pricing but also consumer education (as to the advantages of local produce) and promotion of 'locally grown'. Providing efficient and effective marketing channels for local produce is also a key aspect of encouraging the growth of the agriculture sector. Such channels need to interface with food safety requirements associated with transporting produce with the food's safety preserved along the food chain.

Competing Demands for Land and Water

Crops that require high water inputs in the open field may be viable options in a closed environment with the necessary investment in infrastructure. Neither will be optimal without appropriate farm management and skills. Agriculture Water Use and Land Use Assessments, as described in Policy 1 and 2, will aid in decision making regarding these limited resources. Similarly, animal production decisions need to take account of environmental pressures on the animal such as heat and low humidity.

Availability of Other Inputs

Technology – Availability of technology to the farmer could impact on production choice and will impact on productive capacity. Basic technology such as farm tools, irrigation equipment and farm vehicles will expand productive capacity and broaden production choices. The extent to which choices are broadened may depend on the scale of operation or the complexity of the agricultural produce. Advanced technology such as automated processes, hydroponics, re-circulating system aquaculture etc. will significantly expand choices.

Finance – Investment in agriculture from public or private sources, will impact on production choice decisions. Even small investments in basic technology or training will expand choices while larger investments may influence the production choice that relies on significant infrastructure or technical expertise (such as aquaculture production, intensive livestock production or controlled atmosphere facilities). Facilitating investment is a key role of Government.

Animal species and plant varieties – Availability and/or development of plant varieties suited to the Abu Dhabi environment (soil types, limited or brackish water) or for controlled atmosphere or other plant facilities will expand production choices and increase productive capacity over time. Similarly, availability and/or development of animal species suited to the environment (such as camels or goats), specially bred for the environment (such as the Awasi sheep) or imported for particular facilities (fish species for aquaculture) will also influence production choice and productive capacity.

Agriculture compounds – Availability of agriculture compounds such as animal feed or plant pesticides will influence production choice. This could also influence production methodology such as availability of organic pesticides for organic farming and veterinary drugs for managing intensive livestock production. Productive capacity is impacted by the availability of agriculture compounds such as supplemental feeds for milk production and fruit ripening products. This in turn influences the returns generated by the produce and therefore the production choice when incomes from competing production options are compared.

Infrastructure – Infrastructure such as power, facilities and roading will influence production choice. Reliable and plentiful power is essential for intensive animal production (such as intensive livestock – dairy and poultry and aquaculture) and for certain plant production units (such as controlled atmosphere production). Similarly, facilities from simple storage units to complex closed production units will influence choice as will roading to transport produce for further processing or to market.

Scale of Operation

There are over 24,000 farms in Abu Dhabi of an average size of 2 hectares. Economic viability can be enhanced by the collaboration of farmers through a range of means. Collaboration provides opportunities for enhanced return on investment.

Farm Management and Worker Skills

The production system or farming practices desired may not be achievable without up-skilling or changing key players in the system. This includes the management skills of the farmer and the production/technical skills of the farm operator and worker.

Animal health and Plant protection related requirements

In choosing what to produce, account needs to be taken of any special requirements associated with animal health controls or plant protection. These requirements will attract costs both in potential limitations on production, time and money. They might also deliver benefits for sustainability and productive capacity.

Making the production choice

Those making production choices, assessing the factors above, will need access to data, tools and a consistent framework. ADFCA will support these decision makers through this process.

Production choice can be made at a broad level such as animal or plant production or aquaculture, and organic or conventional farming. Production choice can also be made at varying degrees of specificity within groups – e.g. goats and sheep vs. camels, vertebrate fish vs. crustaceans and molluscs, fruit vs. vegetables, root crops vs. leafy vegetables. Integrated farming would involve choices across a range of agricultural options.

With each scenario or proposal, the factors in production choice decisions listed at the start of this policy need to be addressed. The outcome will be influenced by the extent and focus of social support. Applying the scenarios with and without social support will provide information on the influence that social support will have on the production choice.

Finally, an indication of economic viability will also result from addressing the factors in production choice decisions.

Economic viability

Economic viability is the extent of income generated over expenditure applied – including the cost of capital. It would take all the preceding factors into account but the extent of significance would depend on the objectives of production. For example, income would be dependent on market demand for production, quality and volume of production and farm management skills to generate the production, seasonality, availability of the market and the effects of competition in the market. Expenditure would equate to costs of production and include costs of: all inputs, capital, labour and goods, training and education, addressing waste and any environmental impacts.

Barriers to decision making

Several barriers to reaching decisions on production could be addressed by government involvement, research or support. These include gathering data on costs of production, open field vs. closed environment agriculture, seasonal weather impacts, the capability of the sector, market demands, and identifying consumption patterns in the Abu Dhabi Emirate.

Reliable, baseline data in these areas would assist both government and private interests make investment decisions irrespective of whether those decisions were to support development or generate an economic return.

5.2.1.4. P4 - Economic Sustainability**Position:**

ADFCA acknowledges that the capability and supporting infrastructure of the food chain (farm to fork) to successfully produce, market and deliver significant volumes of safe and high quality food needs further development. ADFCA also acknowledges that there are:

- Government targets for appropriate income levels for qualifying farmers
- Opportunities for farmers to grow more produce required by the market
- Opportunities for farmers to become economically self-reliant.

Subject to any overarching social requirements, ADFCA will invest in building capability in food production on the assumption that the developed capability will contribute to economic sustainability. ADFCA sees itself as a catalyst to building a sustainable production base providing targeted assistance as necessary. The merits of assistance to be provided or to be redirected each investment will be assessed on a case by case basis.

Rationale:

There are opportunities to increase the productive capacity of the food chain, and for the Emirate to produce more of the food its consumers are purchasing. With the exception of a small number of large food producers (such as Al Ain Dairy), there has been little interest shown by the bulk of current participants in the production part of the food chain to invest significantly and thereby take advantage of these opportunities. It is important that farmers grow their contribution to the economy and become economically sustainable.

Without resources from ADFCA to investigate these opportunities, they will not be explored. As a result, the productive capacity of the food chain will not be optimised and farmers will increasingly draw on the Emirate's resources to maintain their standard of living.

Description:

The Abu Dhabi Government is seeking strategic reform in the agricultural sector with an emphasis on the efficient use of available natural resources²¹ and sustainable agriculture. All the agriculture lands in the Emirate have been mapped according to a soil classification system based on the physical and chemical properties of the soil including cation exchange capacity, mineral content, porosity and water holding capacity. For each soil class, a range of broadly described agricultural activities have been identified.

Through the Farmers' Services Centre, ADFCA is leading discussions with farmers about how best to encourage them to grow their productive capacity in a sustainable way. The Farmers' Services Centre has been tasked with engaging with farmers and working together to build sustainable food chains from the market to the farm. By focussing on the market, the market demands are intended to drive the choice and quality of produce grown on-farm thereby providing a greater prospect of selling the produce and of replacing imports. The two key activities undertaken by the Farmers' Services Centre in this process are:

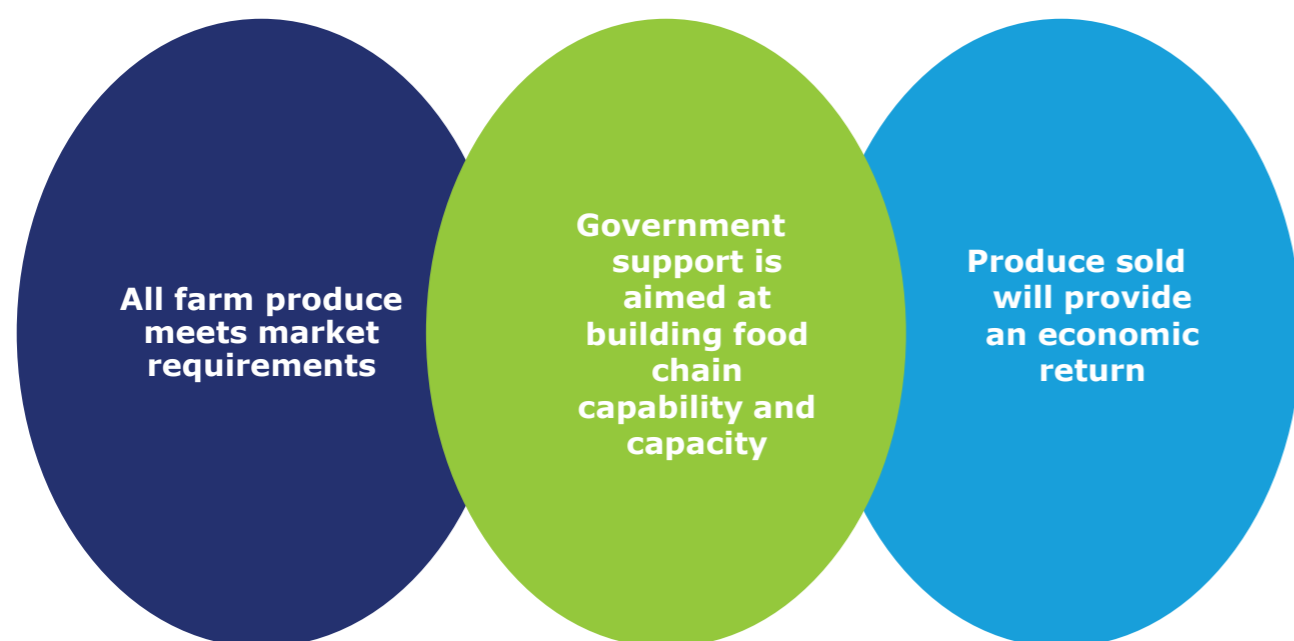
²¹ Farmers' Services Centre Website

- Supporting farmers to produce an increasingly diverse range of quality food
- Marketing the farm produce.

The objective is to work with local farmers to improve their farming practices which will lead to better production choices, higher production levels, better quality crops, and greater environmental outcomes. Equally, the Farmers' Services Centre will work with retailers and large corporate and government customers to provide them with a secure supply of quality produce.

Subject to a broader requirement around social imperatives and support, throughout this engagement the underlying principles are those outlined in the diagram below.

Diagram 25: Principles of sustainable production



1. All farm produce meets market requirements – i.e. there is a ready market for the farm produce
2. The produce sold will provide an economic return to all participants in the food chain. Maintaining a profit motive incentivises the business to be agile, responding to market forces and provides a focus on maintaining a competitive advantage over other nations producing competing products – look for a way to do it better – e.g. clubbing, co-ops, purchasing groups
3. Any Government support will be aimed at building capability and capacity along the food chain and that the investment is made in a way to reinforce the first two principles e.g. facilitating farmers to work together to build scale, share ideas and learnings and building purchasing power.

ADFCA supports the required change in traditional production to one that is more market oriented and which will enhance the agriculture sector in the future. ADFCA will collaborate closely with concerned government entities and stakeholders to maximise the potential of traditional small farm productivity such as through gathering essential data and conducting impact assessment studies.

5.2.2. Agriculture Protection

Agriculture protection relates to a component of biosecurity (as per the FAO definition) as it applies to animal and plant life and health. It covers pest and disease prevention and exclusion, surveillance, emergency responses to incursions and crises management such as might be presented through trans-boundary pests and diseases and zoonotic diseases.

The objective of animal health and plant protection measures is to prevent, minimise, and/or eliminate the occurrence and impacts of specific pests and diseases, along with the transmission of zoonotic agents to humans, either directly from animals or through the food chain.

An effective animal health and plant protection system has a number of components including:

- Science and risk based approach to identifying potential pests and diseases of greatest impact and options for responding to any associated risks
- Identification of risk pathways and implementation of effective pre-border and border measures to minimise the entry of exotic pests and diseases
- Strong global and regional co-ordination to identify and manage emerging risks to human, animal and plant life and health
- Surveillance programmes and diagnostic services that are able to detect and identify the arrival and spread of specific pests and diseases, that includes the use of effective identification and traceability systems
- Partnerships with agriculture producers regarding animal and plant health objectives, and coordination with government agencies and agriculture stakeholders
- Comprehensive plant protection and animal health approaches to minimise the introduction and impacts of specific pests and diseases (including zoonoses) into farms
- Effective education and awareness programmes to ensure on-going compliance
- Strict enforcement of agriculture protection requirements particularly at borders and when regulated/controlled areas are established
- Sufficient capability to achieve the required objectives of the system.

Within the UAE, the Federal Ministry of Environment and Water has the primary accountability for pre-border and border measures to minimise the entry of exotic pests and diseases.

The Ministry then coordinates with the Emirates local competent authorities to be responsible for implementing post border protection measures. In the Emirate of Abu Dhabi, ADFCA is the competent authority for this purpose.

Nonetheless, Abu Dhabi and the other Emirates have a very real interest in the Federal Government's area of responsibility of the biosecurity system. It is therefore essential that the Federal Ministry enables active participation of ADFCA as the local competent authority in developing and implementing policies in these areas.

In the post border area, and in order to move towards an effective international best practice agricultural protection programme, five key areas are covered. There are four policies related to animal health and plant protection. These are:

- On-farm Prevention Measures
- Pest and Disease Control
- Regulated Areas for Pest and Disease Management
- Emergency Preparedness and Response.

Within each of these animal health and plant protection policies, a risk analysis process should form the scientific basis on which individual pests and diseases of greatest impact on the agriculture sector are identified and responses developed. The assessment process (including assessment of economic impacts) should be consistent with international standards and in collaboration with other Emirate, UAE and GCC agencies.

Good animal and plant health outcomes cannot be achieved by ADFCA alone, and therefore ADFCA works in partnership with agriculture producers and in co-ordination with other Federal and Emirate-level government agencies in order to achieve the required objectives.

The fifth policy covers the protection of naturally occurring breeds and varieties of value to agricultural production in Abu Dhabi.

5.2.2.1. P5 – On-Farm Prevention Measures

Position:

ADFCA recognises that on-farm prevention measures to minimise the introduction of animals and plants carrying pests and diseases are an essential part of an agricultural protection policy (as are measures to control pests and diseases that are already present). This is even more so the case in Abu Dhabi where imports into the UAE are controlled at the Federal level and free movement of animals and plants occurs within the UAE.

ADFCA does not have the immediate legal authority to restrict entry into the Emirate of Abu Dhabi of animals and plants, or their products, as this is the accountability of the Federal Ministry of Environment and Water. ADFCA will therefore develop guidelines / codes of practices for prevention measures that will protect agricultural production units from the arrival of pests and diseases (including zoonoses) carried by infected animals or with new planting material (e.g. seeds, bulbs and tubers, plants for planting).

Rationale:

The introduction of pests and diseases to the farm level is unwelcome. On-farm prevention measures refer to the application of best practice animal and plant health preventative measures to minimise the entry of new pests and diseases.

For best results whenever possible farms should operate a “closed” animal and plant production system, and only introduce new animals and plants (after quarantine) from a small number of reliable sources (e.g. nurseries, seed merchants, animal breeding units) known to be free of pests and diseases of concern.

Description:

ADFCA will develop guidelines for on-farm prevention measures that will minimise the risk of pests and diseases entering farms with newly-arrived infected animals or planting material.

Any animals and plants to be introduced to a farm should come from pest or disease free sources or those treated/vaccinated against pests or diseases that present a risk prior to entry onto the property. Wherever possible, newly-

introduced animals should be isolated for an appropriate period of time and/or be closely monitored to ensure they do not present new risks to the animal production unit.

Prevention measures for animal production units should cover all relevant risk inputs and movements onto the farm (including feed and people internal traffic routes), and include day to day hygiene measures to be used within the farm (including isolation of suspected animals, rodent pest control and standard cleaning disinfection procedures), along with safe disposal methods for dead or diseased animals. Occasionally more stringent measures may need to be applied such as confinement units.

Assurance schemes are an important component of on-farm prevention measures for crop production units. The focus of assurance schemes related to planting material will be on the producers and/or suppliers of planting material. Schemes developed by ADFCA should involve monitoring of producers and/or suppliers of planting material (be it locally produced or imported into the Emirate) to ensure that any planting material being provided to farmers is sourced from pest and disease free areas or treated against pests and diseases of concern. Farmers requiring planting material can therefore be assured that pest-affected material is not being introduced to their farm.

Training of farmers and farm workers regarding on-farm prevention measures is an essential part of achieving good protection outcomes, and this should be actively pursued once guidelines for prevention measures for the various types of agriculture production are developed.

The farm worker is also normally the first person to recognise sick or diseased animals and plants, and therefore they must be trained to recognise abnormal situations, and know what to do and who to contact in such situations.

5.2.2.2. P6 – Pest and Disease Control

Position:

ADFCA acknowledges the impacts that specific pests and diseases can have in animal (including aquaculture and apiculture) and plant production in the Emirate. ADFCA also recognises the importance of pest and disease control in the efficient production of animals and plants. ADFCA will identify the pests and diseases of greatest impact to the agriculture sector. ADFCA will ensure Emirate farmers are informed of best practices for the control of specific pests and diseases. This is necessary to ensure Emirate farmers are encouraged to apply pest and disease controls as required to protect the health of animals and/or plants on their farms from outbreaks of pests and diseases as far as possible. ADFCA will ensure that appropriate control methods for specific pests and diseases (including zoonoses) are available to farmers and/or individuals or professionals with approved competencies, and that the application of the methods follows recognised best practice (e.g. integrated pest management, good agricultural practice and vaccination).

Rationale:

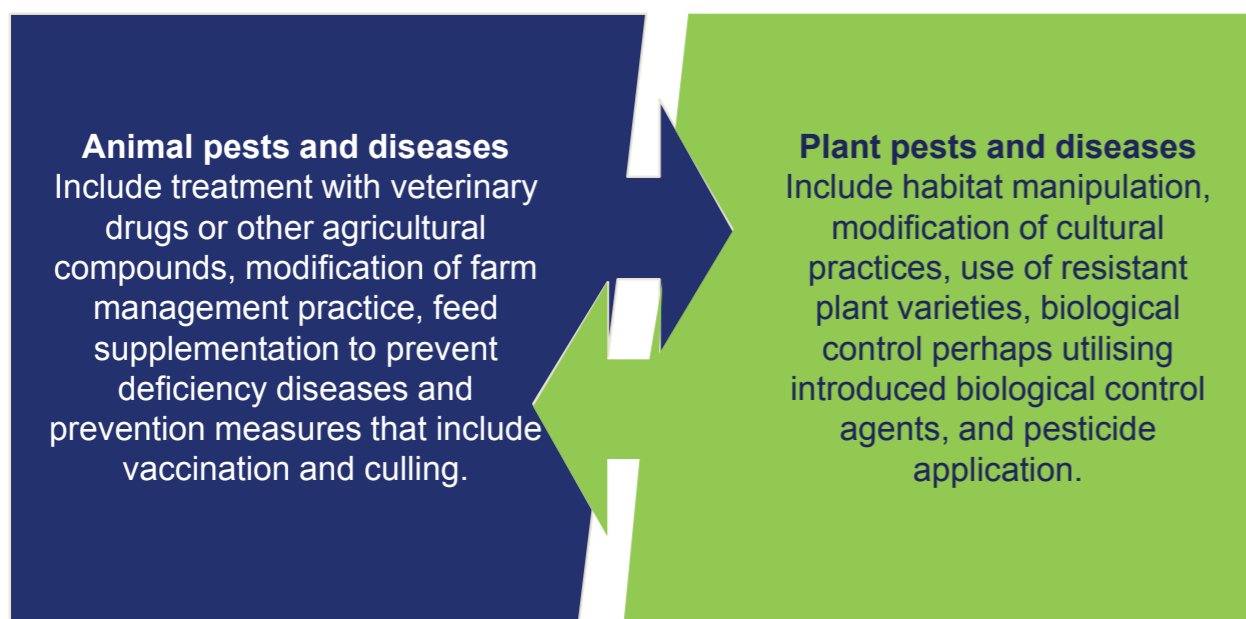
The occurrence of disease(s) and pests amongst animal and plant populations can severely affect human, animal and plant life and health. Furthermore, there are often economic consequences from the effects of diseases and pests on animal and plant production. Pest and disease controls need to be applied as necessary to maintain the health of animals and plants and mitigate risks to humans at the end of the food chain. This in turn maximises agriculture production and safeguards human health in Abu Dhabi.

Description:

Diseases (including zoonoses) and pests of animals and plants are a reality of agriculture. Established pests and disease-causing organisms possess effective natural means of dispersal and spread but add to this man-assisted (accidental or otherwise) movement of these organisms, and the risk of damaging effects from pests and diseases cannot be denied. Appropriate pest and disease control methods are therefore critical to ensuring a sustainable future for the food producing farmers.

In addition, the effectiveness of pest and disease control measures, whether applied by individual farmers or as part of area wide management programs, is dependent on the existence and performance of animal health and plant protection services that meet international standards. These services must have the capability and capacity to ensure that appropriate pest and disease control methods are available to farmers and/or individuals or professionals with approved competencies, and that the application of the methods follows recognised best practice.

Diagram 26: Key methods/techniques for managing pests and diseases



Techniques for pest and disease control in animals or plants should be integrated, ensuring that pest and disease damage is below levels that would be economically damaging with a minimum adverse impact of any chemical (such as pesticide or drench) upon the environment and the food production system. Integrated pest management is an ecosystem-based strategy that focuses on long-term prevention of pests or their damage and limits the excessive and

unjustified use of pesticides through a combination of techniques.

To ensure that appropriate pest and disease controls are available to farmers in Abu Dhabi, ADFCA will evaluate the relevance of research conducted elsewhere in the world on controls as well as pertinent international standards.

From time to time, ADFCA will initiate research and development projects to investigate:

- The efficacy of particular controls under prevailing conditions and production systems in Abu Dhabi
- Under closed (quarantine) situations the suitability and specificity of introduced biological control agents for the target pests or certain animal diseases e.g. Salmonellosis and Campylobacteriosis in poultry.

Subsequently, and as necessary ADFCA will liaise and collaborate with the Ministry of Environment & Water (MoEW) and other Federal agencies as appropriate to facilitate the import, introduction or implementation of suitable controls and measures (e.g. pesticides, vaccines, biological control agents, microbial controls, resistant crop varieties) for use in Abu Dhabi. Such controls may be applicable to ADFCA-led Emergency Responses.

Should ADFCA consider eradication instead of on-going management/control of a particular pest or disease, then a cost-benefit analysis together with the assessment of the technical feasibility of the eradication proposal should be conducted.

Application of recognised best practice in pest and disease control throughout Abu Dhabi requires farmers, farm workers, animal health and plant protection professionals in the Emirate to be informed and trained:

- In recognising signs and symptoms of pests and diseases in crops and animals
- When and what controls should be applied to follow best practice.

Codes of practice prepared by ADFCA in consultation with key players involved in animal and crop production should set out best practice in pest and disease control. Individual codes of practice may be required for each of the main crops (e.g. date palm, members of Cucurbitaceae and Solanaceae families) and animal types (e.g. sheep, camels, poultry). Each code should include information advising farmers and farm workers how to recognise signs and symptoms of commonly occurring pests and diseases.

ADFCFA has a leading role in ensuring appropriate training is provided on an on-going basis to achieve effective pest and disease control as necessary. This is to minimise the impact of pests and disease in animal and plant production on Abu Dhabi farms.

5.2.2.3. P7 - Regulated Areas for Pest and Disease Management

Position:

ADFCFA recognises the importance of area-wide management of pests and diseases, including zoonoses. An area may be an officially defined country, part of a country or all or parts of several countries. Accordingly, as the competent authority for the Emirate of Abu Dhabi, ADFCA will as necessary establish, or assist UAE's federal government or the GCC in the establishment of areas regulated for the purpose of managing pests and diseases. Such regulated areas may be zones/regions, compartments, pest free areas or areas of low pest prevalence.

Rationale:

Given the impact of pests and diseases in animal and crop production in the Emirate, as well as the potential harmful effects of zoonoses (e.g. brucellosis, tuberculosis, avian influenza) on human populations and the inherent overlap of animal health and public health interests, the legal basis for the management of pests and diseases is often necessary over wide areas. Establishment of regulated areas (specifically, zones/regions, compartments, pest free areas or areas of low pest prevalence, also smaller areas referred to as pest free places of production and pest free production sites) also provides a means for official recognition in the international trading environment of a distinct animal or plant health status in the defined area(s).

Consequently, given that UAE imports the majority of agricultural produces and food consumed, the establishment of regulated areas may be necessary to support the justification for sanitary or phytosanitary measures taken by UAE or the GCC for protection of animals and plants, and their products as they enter the Abu Dhabi food supply.

Description:

For the purposes of managing specific pests and diseases, ADFCA will develop procedures for the establishment of regulated areas, and the capability to establish such areas when necessary. Such regulated areas are referred to as zones/regions or compartments in regard to animal health status, whereas pest free areas or areas of low pest prevalence are recognised terms in regard to plant health. International standards provide guidelines for the establishment of zones/regions and compartments, and pest free areas and areas of low pest prevalence, respectively. If the defined area includes all or part of the Emirate of Abu Dhabi, ADFCA is responsible, in coordination with other agencies, for the establishment of the appropriate regulated area where cost-benefit analysis supports its establishment in Abu Dhabi. If the defined area includes any or all other Emirates, ADFCA will cooperate with MoEW to establish and maintain the area and facilitate effective coordination with neighbouring Emirates as necessary. If the defined area involves other GCC members, ADFCA will, as appropriate, follow the approach required and led by the GCC.

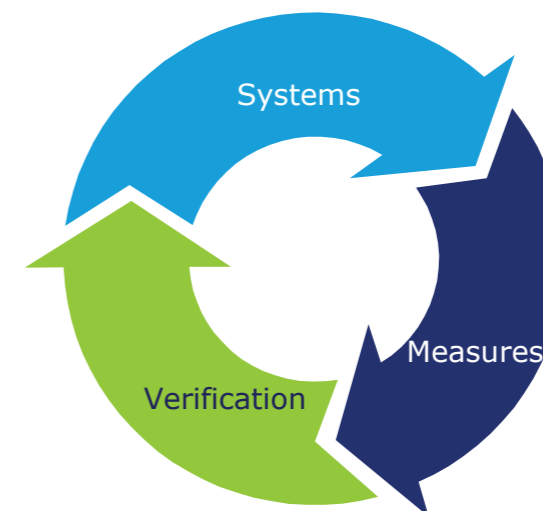
Pests and diseases that may, from time to time for defined periods, require the establishment of a regulated area for their effective area-wide management are likely to appear on OIE Lists or the GCC Regulated Pest List. ADFCA will therefore operate within these parameters. ADFCA will also collaborate with Federal authorities to implement appropriate measures that prevent the introduction of emerging pests and exotic diseases.

ADFCFA will ensure it has the technical and human resource capability and capacity to establish or assist in the establishment of a regulated area, as necessary. ADFCA Officers will require legislated powers to establish a regulated area – these powers are the same as those required in Emergency Responses (P8). ADFCA Officers will be involved in the three main components/stages in the establishment and subsequent maintenance of a regulated area. For the establishment of a pest free area or disease free zone/region, the three main components for ADFCA to consider are:

1. Systems to establish freedom from pests and diseases
2. Phytosanitary or sanitary measures to maintain freedom
3. Checks to verify freedom has been maintained.

In addition, ADFCA will consider whether there is a need to define and establish a buffer zone in conjunction with the establishment of any regulated area.

Diagram 27: ADFCA's Key Considerations in the establishment of regulated pest & disease control areas



5.2.2.4. P8 – Emergency Preparedness and Response

Position:

ADFCFA recognises the importance of being able to respond quickly and efficiently to emergencies created by pests and diseases (including zoonoses and mutations and variations to diseases) in animals and plants. In doing so, ADFCA is aware of the roles of the GCC in undertaking emergency response at the regional level and the UAE (MOEW) at the Federal level. These roles will impact on ADFCA's ability to provide the necessary assurances to both the international community along with domestic consumers and farmers alike.

ADFCFA will develop response protocols that are to be applied in a range of scenarios from small to large scale and general to specific. ADFCA will also develop a crisis management plan in collaboration with Emirate and Federal agencies. ADFCA will ensure it has the technical and human resource capability and capacity to respond to any arising emergency.

Rationale:

A range of potential agriculture emergencies exist, varying in their likely occurrence, likely threat to human health and impact on the integrity of the food chain. Systems must be in place to deal with the likelihood of agriculture related emergencies of any nature. The design of such systems must take into account and limit the potential for abuse of the system for financial gain. The application of any such systems must be subjected to firm and periodic audits.

Description:

Agricultural emergency responses vary from minor regulatory action through to major responses with significant impacts, sometimes with limited knowledge of the cause and how to respond.

Diagram 28: Key components of effective emergency response



Key components of emergency response are:

- Effective surveillance for early detection of exotic pests and diseases (including zoonoses)
- Preparedness for necessary emergency response including contingency plans
- Rapid investigation and diagnostics
- Application of quarantine measures to limit the pest or disease spread
- Early notification to the Federal or relevant International organisations through the concerned federal entity.
- Ability to apply eradication and control measures, including treatments or the destruction of animals or plants.

ADFCA recognises the required Federal and regional collaborative roles should satisfy:

- Harmonisation of agricultural protection policies and strategies, using science based risk assessment
- Development of joint pest and disease documented control programs across the UAE and GCC that addresses risks of spread by movement through common borders
- Development of compatible systems for pest and disease reporting and information sharing
- Exchange of information on pest and disease occurrence and incidence along with aligned effort when preparing and drafting contingency plans.

In some situations ADFCA will not have sufficient resources to manage the incident. Pre prepared response plans and agreed response systems must be in place to deal with the likelihood of emergencies of any nature. ADFCA must be prepared to manage or coordinate management of events advised to it from a regional or Federal level, as well as within the Emirate. Equally it must be prepared to manage events it identifies and which need a broader Federal or regional involvement.

ADFCA will be expected to provide the necessary assurances to both consumers and farmers alike, in collaboration with other relevant authorities, where necessary.

ADFCA needs to develop a response protocol that is able to be applied in a range of scenarios (from small to large scale), to be initiated by ADFCA through its operational and compliance activities and from international agencies or other Emirates/Federal level alerts).

In emergency situations it is critically important that sufficient capacity and capability has been pre-identified, along with clear accountabilities. There must be appropriate understandings with other Abu Dhabi government agencies prior to any emergencies occurring. This should be developed under a Crisis Management plan in collaboration with the relevant federal/emirate level authorities).

Range of Emergencies:

Emergencies will range from small scale involving a few agriculture producers, to medium scale involving many, to large scale involving all the Emirate and at times beyond.

Crises Involving other Official Entities

ADFCA will also be involved in emergencies where there is a national, Federal or regional interest or where other government entities have the primary accountability (e.g. an emergency water shortage). It is critically important in these situations to know who is in overall control, that accountabilities are clear, and there is appropriate mutual inter-agency understanding among other affected official entities.

Response Preparedness and Management

Preparation is key. One method of testing preparation is to conduct simulation exercises – particularly for scenarios that have a reasonable probability of occurring. This provides practice for key players to become familiar with their roles and responsibilities, as well as to learn and improve the response approach, ensuring appropriate actions are conducted smoothly and efficiently in the face of threats however severe.

ADFCA will ensure it has the technical and human resource capability and capacity to respond to any rising emergency, including access as necessary to Reference Laboratory facilities and an ability to access stored emergency equipment through arrangements with other Federal and Emirate level official entities. ADFCA will form a multidisciplinary Crisis Management Team representing all affected official entities and stakeholders, to be led by ADFCA.

Arrangements will be set up to provide for this capability in the event that ADFCA does not have the resources internally.

A crisis management strategy that includes preparedness or contingency plans is necessary. Specific response/contingency plans should be developed both for high impact exotic pests and diseases, along with a more general response/contingency plan that can be used when an unanticipated emergency response is needed. The crisis management strategy will ensure that the various official entities, regulators and stakeholders who might have a role or an interest in the issue (in particular the health authorities), work together to understand and manage issues, mitigate risks and maximise opportunities.

A Crisis Management Team set up to manage an issue must ensure:

- Information on incidents is rapidly made available within ADFCA and to stakeholders, as well as transparency with early reporting Federally
- A means by which participants can work together to identify the ways in which incidents can be best managed
- A co-ordinated approach is taken on emergencies with the aim of preventing confusion and the resultant loss of confidence
- Farmer and agriculture support is available as appropriate to provide for early recovery back to normal in some situations
- The Team’s activities are scalable and consistent – that response phases and core management approaches are the same for a large response as for a small response
- The Team has a response organisation structure dictated by the work – organisation charts are based on response activities, not on role-holders, which allows responses to be easily scaled up or down.

ADFCA will also need to develop a compensation scheme where emergency action taken on farms causes loss to the farmer, to ensure farmers support in early reporting and eradication control measures. The provision for compensation will be considered, if appropriate, subject to specific criteria. Any compensation scheme will involve consultation and coordination with relevant agencies.

5.2.2.5. P9 - Preservation of Valuable Agricultural Species

Position:

ADFCA will ensure that the Emirate makes best use of and capitalises on Abu Dhabi’s valuable genetic resources for agricultural purposes. ADFCA recognises the prime role of the Environment Agency Abu Dhabi (EAD) in the conservation of Abu Dhabi Emirate’s biological diversity, and will coordinate with relevant Federal/local agencies as necessary to protect and preserve local species or varieties of value to agriculture. .

Rationale:

Naturally occurring species of animals and plants are well adapted to living under the prevailing environmental conditions. Given the harsh arid conditions present in the Emirate, it is inevitable that well adapted and highly productive genetic resources exist in the Emirate. To maximise the efficiency of farm production, relevant local species or varieties (e.g. date palm (Phoenix dactylifera), and camel, sheep and goat breeds) should be protected and utilised for the efficient production of food or feed in Abu Dhabi.

Description:

In recognising the prime role of EAD in the conservation of the Emirate’s biological diversity, ADFCA focuses on ensuring the best use of Abu Dhabi’s valuable genetic resources in the Emirate’s agriculture production. In doing so, ADFCA follows the steps of the Integrated Risk Management Framework:

Diagram 29: Integrated Risk management Framework



Step 1:

- Establish criteria for and identify genetic resources– species, breeds or varieties – of potential value to agriculture
- Determine the relative value to agriculture production of the identified genetic resources in the UAE
- Ascertain whether there is any risk in the foreseeable future to their perpetuation in the Emirate.

Step 2:

- Where necessary, develop plans (including coordination with concerned entities) to preserve, best use and capitalise on Abu Dhabi’s valuable genetic resources
- Prioritise plans for implementation
- Select highest priority plans for implementation.

Step 3:

- Implementation of selected plans
- Where appropriate, liaise with MoEW to ensure that unique genetic resources cannot be used in agriculture production elsewhere in the world without due commercial recognition.

Step 4:

- Monitor the effectiveness of implemented plans in preserving, making best use and capitalising as far as possible on Abu Dhabi’s valuable genetic resources.

Local camel, sheep and goat breeds, and varieties of date palm, Phoenix dactylifera, are examples of important genetic resources utilised in agriculture production in Abu Dhabi and other Emirates. Identification and description of local breeds and varieties, needs to be undertaken as a priority.

5.2.3. Common Agricultural Policies

Agriculture Production and Protection policies are supported by a number of policies that have relevance for both production and protection areas. Unlike the general policies that apply to both agriculture and food safety, the agriculture supporting policies do not necessarily stand apart from production and protection. For example, Research and development is driven by the needs of the production and protection activities of the Emirate. Similarly, the extent of Agricultural compounds policy depends on the compounds used or applicable to imports.

5.2.3.1. P10 – Research and Development

Position:

ADFCA invests in research and development (R&D) in the agriculture sector in many ways. One is through commissioning R&D in areas relevant to agriculture. Another is through providing guidance to the wider Agricultural R&D sector. ADFCA will ensure that such R&D is directly aligned to addressing either the key issues facing the sector or key data needed for decision making in the sector. ADFCA has a key role in identifying and recording issues and data needs and continually prioritising these for the purpose of allocating R&D funds. ADFCA will work closely with the concerned agriculture bodies’ e.g. Farmers’ Services Centre, as appropriate. Prioritisation is based on robust analysis of costs and benefits (including severity of immediate risk) and impact.

ADFCA collaborates with other organisations involved in R&D in Abu Dhabi, the UAE, in the Middle East and the world to ensure it does not commission duplicative research and development. ADFCA works to leverage existing R&D, and tailors this to the local environment where necessary.

Rationale:

R&D, when aligned to solving the key issues facing the agriculture sector or meeting its data needs, can enable economic and environmental sustainable development. This will assist Abu Dhabi to enhance its traditional agricultural sector in to a more competitive one. Having a robust R&D strategy, which incorporates partnership and collaboration, will enable more benefit to the agricultural sector for the same or less cost.

Description:

Sustained government investment in agricultural R&D will help to put Abu Dhabi agriculture on a strong growth path.

To deliver the best value for money, research commissioned by ADFCA:

- Needs to address issues and data needs identified by the Emirate
- Should not duplicate research undertaken or in train elsewhere in the region or the world
- Should be prioritised.

An agricultural R&D strategy for ADFCA could deliver on all the above principles and provide a pilot for a broader R&D strategy for the Department.

An Agriculture R&D Strategy:

An Agriculture R&D strategy will set out how ADFCA’s investment in R&D would enhance the productive capacity and sustainability of the agricultural sector and the provision of safer food for the nation. It would describe ADFCA’s strategic priorities for R&D that was needed. It would also describe the activities to be carried out, and set out requirements around obtaining and using R&D to support the delivery of the agricultural policies and ADFCA’s strategic goals.

A first step in the development of an agriculture R&D strategy would be an end-to-end review of current issues and data needs in the agriculture sector.

This would provide the range of possible R&D areas warranting investment, and added analysis would identify the strategic goals to be delivered by the R&D and who might be best placed to conduct the R&D.

This could be refreshed annually on a rolling basis.

The key features, which will form the base of the R&D strategy, are set out below.

Steps in the Development of an R&D Strategy:

The R&D strategy will outline the key R&D ADFCA will need to deliver its strategic objectives, test progress, and identify and shape future priorities. The following outlines the actions ADFCA can be taken to identify, obtain and use R&D effectively:

Diagram 30: Steps in the Development of an R&D Strategy for Agriculture



Step 1: Identifying and Obtaining the Evidence and Analysis Needed

This involves identifying the R&D needed, prioritising effectively and transparently and delivering good quality work that addresses the prioritised R&D needs.

This includes:

- Horizon scanning and consultation to pick up new issues, threats and opportunities across ADFCA, Government and industry. The Farmers’ Services Centre will contribute to provide ADFCA with relevant feedback from the producers.
- Making better use of existing data by increasing awareness of data, by systematic analysis and review, and by agreeing a framework setting out the principles and approach to sharing data and research funding with industry and Non-Governmental Organisation (NGO) partners.
- Identifying on-farm, in-situ R&D as well as research conducted in controlled facilities. This balance is important in order to ensure robust, real time R&D.

Step 2: Prioritisation

Prioritisation of R&D needs to be undertaken centrally using a common framework to ensure the best combination of work across all objectives, and choose between current and future priorities. Prioritisation can be undertaken in consultation with others e.g. the Farmers' Services Centre.

Key features of a prioritisation framework are:

- A determination of the benefit in relation to the resource requirements (net benefit score)
- A determination of alignment to public priority
- Explicit consideration of the potential for partnership in all new work. This will be reinforced by publishing a forward look of needs
- Confirmation of international alignment
- The contribution to the development of Agriculture sector capability and capacity
- Determination of the likelihood of success
- A balance of single and multi-year projects.

Results will be published, setting out the main work to commission in the coming 1-2 years. This will provide transparency and enable external comment, before the commissioning of new work, on:

- Existing data that can address the identified needs
- Opportunities for effective collaboration
- Whether the evidence needs are defined in the best way.

Step 3: Partnership:

This involves work in partnership with other funders and stakeholders to ensure coherent approaches, avoid gaps and duplication, and exploit opportunities to do things better by working together. Collaborate effectively across ADFCA including with; FSC, wider Government, the concerned GCC and international bodies.

This includes:

- Promotion of effective internal collaboration by:
 - Building multidisciplinary teams across ADFCA to make sure the range of expertise and skills is integrated in to the science and policy work
 - R&D prioritisation across ADFCA that helps identify internal partnerships
- Prioritise and support the delivery of collaborative work with external partners including:
 - Determining if the activity could be outsourced to another capable organisation – with attached monitoring and evaluation by ADFCA

This will be delivered through partnerships in the UAE, GCC and beyond, to identify, share and analyse data, identify and respond to opportunities for strategic collaboration, and develop effective responses

Key partnerships will be with:

- Other departments to make sure that work is co-ordinated as necessary and relevant long-term, underpinning R&D and skills are supported in key areas
- Enforcement, monitoring and industry partners, to make sure that informal and enforcement data, as well as qualita-

tive information, are gathered and used effectively to inform work

- With GCC and member regulators and risk assessors
- Government professional networks in economics, social research, operational research, and developing partnerships with the learned and professional societies
- Charitable, not-for-profit and industry partners, to make sure ADFCA co-ordinates and shares data and resources effectively where this helps to deliver better R&D outcomes
- Consumers and consumer groups to ensure R&D reflects their needs and interests.

Step 4: Interpretation, Knowledge Transfer and Translation

This step focuses on how R&D is analysed and used effectively and communicated to everyone who may need or want to use it – not just the R&D community but consumers, producers (predominantly through the Farmers' Services Centre), retailers, exporters and enforcement partners.

This includes:

- Making sure R&D is analysed and interpreted to rigorous scientific standards
- Translating R&D effectively into actions to deliver policy and organisational objectives and make these linkages clear to stakeholders
- Communicating with and transferring knowledge to those who need to use it – including agriculture business operators - and to other stakeholders.

Step 5: Knowledge, Skills and Capabilities:

ADFCA will maintain and develop the knowledge, skills and capacities it needs to deliver its research and development objectives, within the ADFCA and externally.

ADFCA will maintain and develop its knowledge, skills and capabilities by developing in-house capabilities in core areas. These might include arid region agriculture for animals and plants, production methodologies, animal feed science and nutrition studies, environmental health, veterinary science, economics, social science, operational research and statistics.

ADFCA will also recognise the skills and capability in external organisations, and where appropriate, will outsource specific R&D components.

In the long term ADFCA may consider the following approaches:

- Outsourced R&D: Retain the policy and prioritisation capability inside ADFCA but outsource the R&D work to other competent organisations
- Separate standalone entity: Develop a standalone R&D organisation and contract it to undertake the Agricultural R&D programme.

Step 6: Appraisal and Evaluation:

ADFCA will use data, tools and analysis to appraise its work before it is commissioned to inform priorities and define specifications. It will also evaluate completed R&D projects and implemented policies to determine quality, success and impact.

This covers:

- Individual R&D projects, programmes and bodies of work
- ADFCA policies and initiatives - as they are developed, and their effects in practice
- Progress and impacts of the R&D strategy itself
- Monitoring and evaluation of outsourced R&D.

5.2.3.2. P11 – Social Support

Position:

ADFCA recognises that social support is necessary to encourage sustainable agricultural practices and production. ADFCA allocates social support to encourage:

- Compliance with best practice – including alignment to agriculture policies
- Farm owners to continue farming, become self-reliant and adopt feasible, sustainable and economically rewarding (competitive and marketable) production
- Preservation or utilisation of the natural resources of the Emirate of Abu Dhabi
- Farmer to make a contribution to supplying local market demand and Abu Dhabi’s food supply with safe and good quality products
- Maintenance and enhancement of unique cultural production characteristics
- Farm production to contribute to food security.

ADFCA will continue to provide social support to producers so long as policies are adhered to. For example, responsible use of water, appropriate land use, good animal welfare practices and responsible use of veterinary medicine or agricultural compounds.

Rationale:

Social support continues to play a key role in enhancing the economic and environmental sustainability of the agricultural sector. Abu Dhabi is a harsh farm production environment, and encouragement is necessary to maintain the heritage of farm production whilst ensuring there is a sustainable contribution to the Emirate’s food supply - assisting with the achievement of food security.

Description:

Currently, the agriculture sector draws heavily on social support. Social support, such as power, access to good water and discounted feed, has delivered some unintended consequences in the sector, for example, on what to grow sustainably on the farms. Using social support to facilitate sustainability, build knowledge on the true cost of production and encourage compliance with best practice will be beneficial to the agriculture sector in the long term if applied correctly.

Social support initiatives will be used to encourage the following six outcomes.

Diagram 31: Outcomes of Social Support



Compliance with Best Practice – Including Alignment to Agriculture Policies

Social support is one tool which will be used to encourage farmers to comply with best practice. Best practice, can be defined as those practices outlined in the agriculture policies. Through social support, ADFCA is incentivising the modernisation and improvement of farm management and effective management of pests and disease. For example, to encourage the optimisation of water, social support might be used to enable farmers to purchase new technology which enhances the on-going efficiency of water use. Social support can also be removed if best practice is not complied with – providing both an incentive to comply, and a consequence for non-compliance.

Farm Owners to Continue Farming, Become Self-Reliant and Adopt Feasible, Sustainable and Economically Rewarding (Competitive and Marketable) Production

Social support can be used to provide incentives for farm owners to continue farming or to return their farm land to agricultural activity. Social support can also be used to encourage a variety of production to enable farmers to be self-reliant and sustainable in their production. For example, the combination of animals, fruit and vegetables is encouraged on traditional farms.

ADFCA, through one use of social support, is trying to encourage commercial level producers to integrate with small farmers, including supporting market channels for them. For example:

- Al Ain Dairy
- Al Foah Dates.

ADFCA also sees the ‘clubbing together’ of numerous small producers as a key to the economic viability and sustainability of the agriculture sector in the medium to long term.

Preservation or Utilisation of the Natural Resources of the Emirate of Abu Dhabi

Social support can have a positive impact on preservation or utilisation of natural resources if the incentives to do so are carefully targeted and constantly monitored and reviewed to ensure delivery of the objective. Preservation of ground water is one area that could be effectively targeted by support schemes.

Farmers to Make a Contribution to Supplying Local Market Demand and Abu Dhabi’s Food Supply with Safe and High Quality Products.

Incentives, in the form of social support, are needed to enhance the traditional sector into a more productive and competitive sector. Local produce needs to improve so that it meets good safety standards and is of high quality thereby becoming competitive with like products from other countries. The ‘clubbing together’ of farms to create greater economies of scale would be beneficial in getting appropriate quantities of quality local produce effectively to market. However, only through a focus on developing and maintaining an understanding on the true costs of production will this approach be economically sustainable.

Maintenance and Enhancement of Unique Cultural Production Characteristics

There is a social imperative to assist in the management of farms gifted to Emirati. Social support means that ADFCA can deliver on its objectives of enabling people to retain traditional contact with the land, and retain the cultural status. However, this may need to be balanced by allowing social support to also be a catalyst for commercialisation.

Farm Production to Contribute to Food Security

Social support in the agriculture sector is aligned to ADFCA’s food security objectives. This is the basis for encouragement to increase production, be self-reliant, supply to the market, and produce variety.

5.2.3.3. P12 - Agriculture Compounds

Position:

Businesses and farmers involved in agriculture production, processing and marketing of food have the primary responsibility for ensuring that their actions concerning agriculture compounds do not present unacceptable risks to human, animal or plant health and to trade and the environment. As the competent authority for Abu Dhabi, ADFCA will collaborate with the Federal Ministry on the control of agriculture compounds and will ensure implementation

of appropriate measures, including those covering handling and application, to address risks and expand agriculture capacity.

Rationale:

The availability of safe agriculture compounds is important for the economic wellbeing of the agriculture sector. Measures covering handling and application of agricultural compounds ensure that any compound is efficacious, safe to use and safe for the animal or plant on which it is used as well as the consumer at the end of the food chain, and that trade is not jeopardised and the environment is protected.

Description:

Agriculture compounds can have a very positive impact on productive capacity by addressing a wide range of issues such as infestations, nutrient intake of animals and plants, fertility, immunity, ripening of fruit etc. Their availability is therefore important.

Agriculture compounds might be available but unattainable for the farmer due to cost, lack of education on use or knowledge of existence or accessibility. Government intervention in such situations can address these barriers to use. Support schemes can make compounds more easily attainable while training and education can up-skill the farm operator and broaden their appreciation of the positive impact that compounds might have.

However, modern agriculture food producing systems should be designed and managed to ensure that the exposure of food producing animals and plants to agriculture compounds does not pose inappropriate risks to human, animal or plant health, trade in food or the environment.

Prior government intervention is important for some agriculture compounds in order to ensure that the compounds available are safe, efficacious and of appropriate quality. Such intervention needs to be flexible enough to keep pace with new technological developments and international standards while managing -any negative environmental and economic impacts on the UAE and member Emirates. Such intervention should also be equitable across those in the agriculture sector and not favour one group of farm operators over another.

Since a considerable portion of agricultural compounds are destined for use within the Emirate of Abu Dhabi, it is important that fraudulent, counterfeit, ineffective or even harmful products are prevented from entering the market. The relative roles and responsibilities of Federal versus Abu Dhabi governments need to be clear in order for efficient and effective implementation and operation of handling and application. This is also vital for ADFCA to be able to apply international best practice at the local Emirate level.

Principles for Implementing an Agriculture Compounds Programme

The design and administration of Abu Dhabi’s agriculture compounds programme to increase productive capacity and manage and control residues should satisfy the following principles:

- Be risk based relevant to the different production systems and product involved
- Support use where beneficial for economic and environmental reasons
- Be prevention focused and recognise that pre-harvest and pre slaughter controls and practices are the primary means for ensuring safe food

- Promote strict adherence to withholding and withdrawal periods for the different kinds of agricultural compounds used for animal and plant production based on international standards and internationally aligned Recommended Daily Intakes (RDIs) in order to prevent residues in animal or plant produce and ensure acceptable food safety outcomes
- Require all parties involved in agriculture and food production be held accountable to ensure unsafe animal and plant products are not sold as a result of the parties' action or inaction
- Provide for audit and sampling programmes that operate effectively to verify compliance with pre-harvest and pre-slaughter controls and practices
- Be cost effective and have the support of stakeholders.

Measures impacting on availability, handling and application will depend on the type of agriculture compound and will range from minimal controls to very tight controls or prohibitions on use. For example, the use of many feeds or composts would have minimal if any controls on handling or application but fertilisers may have controls addressing health and safety, overuse and environmental impacts. Similarly, the use of antibiotics for animals that are also used in the human population or administration of sub-therapeutic levels of antibiotics for animal growth promotion should be tightly controlled or prohibited. In addition, compounds such as live vaccines used in the immunisation of animals must receive particularly rigorous handling controls due to the risks of introducing new virus strains. Their use should be restricted to be under control and supervision of the governmental authorities.

Registration

Any registration of agriculture compounds should meet international best practice and be usable by the Emirates through the application of a sound approval system. As such, decisions on registration must be transparent, accessible and satisfy environmental and economic criteria including impact on human, animal and plant health. For registration applicants, the process should be well documented, clear unambiguous and timely. Adequate guidance and undertakings on the time taken to reach decisions should be published. There should also be mechanisms available for very rapid/emergency registration of agriculture compounds that might be needed to address emergency situations.

Supply and Dispensing

Suppliers of agriculture compounds should be required to store, prescribe or sell agricultural compounds subject to the classification of risk that the product could produce in the food chain or to the environment. When agriculture compounds are able to be sold over the counter, the supplier must ensure that there is information provided as to the correct use of the compounds.

International best practice suggests that for certain agriculture compounds ADFCA will require tight controls such that availability is subject to prescription from a registered animal or plant health professional with approved competencies. Such controls may include requirements that:

- Restrict application/practice to individuals or professionals with approved competencies

- Ensure appropriate holding and storage practices
 - Result in all treated animals/production systems being identified in specified ways
 - Specify that all uses be recorded and/or notified with appropriate traceability and recall systems being in place.
- Inappropriate handling practices of agriculture compounds must be addressed in the implementation of policies at the Abu Dhabi Emirate level.

Use and Application

Agriculture producers will be responsible for ensuring that use and application of agriculture compounds is compliant with registration/label requirements along with ensuring withholding times/withdrawal periods related to the use of agriculture compounds are met before animal and plant products are allowed to enter the food chain.

Agriculture producers should only use agriculture compounds that have been approved for the use in agriculture production systems. Such approval might result in registration. Non-approved products must not be used.

Inappropriate application of agricultural compounds must be addressed in the implementation of policies at the Abu Dhabi Emirate level.

Monitoring, Audit and Enforcement

ADFCA must implement an appropriate audit and compliance programme that includes enforcement, in order to ensure appropriate controls and use of agriculture compounds.

5.2.3.4. P13 - Animal Welfare

Position:

ADFCA, as the competent authority for Abu Dhabi, will ensure compliance with animal welfare requirements by those dealing with animals. The law covering Animal Welfare is set at the Federal level, and recognises the role of the local competent authority for implementation of the law.

Owners or people in charge of animals must provide them with:

- Proper and sufficient food and water
- Adequate shelter
- The opportunity to display normal patterns of behaviour
- Appropriate physical handling to minimise fear and distress including prior to slaughter
- Prevention from diseases and injuries and rapid diagnosis and treatment
- Provisions of particular care when transporting animals via appropriately designed vehicles excluding sick and non-ambulatory animals from transportation.

Rationale:

Those who keep animals have obligations to protect their welfare and government policy should be focused on supporting keepers of animals in providing for the welfare needs of their animals. Good animal welfare practices are also associated with increased productivity. ADFCA will set the expectations, requirements and sanctions in order to ensure that these obligations are being met.

Description:

Animal welfare is the physical and psychological wellbeing of animals. Welfare is measured by indicators including behaviour, physiology, longevity, and reproduction.

Animal welfare at one level can be seen as a complex public policy issue, with important scientific, ethical, economic, cultural and religious, trade and political dimensions.

At another level animal welfare relates to how an animal is coping with the conditions in which it lives. An animal is in a good state of welfare if it is healthy, comfortable, well nourished, safe, able to express innate behaviour, and if it is not suffering from unpleasant states such as pain, fear and distress.

The internationally recognised 'five freedoms' (freedom from hunger, thirst and malnutrition; freedom from fear and distress; freedom from physical and thermal discomfort; freedom from pain, injury and disease; and freedom to express normal patterns of behaviour) provide valuable guidance as well as legislative principles for animal welfare.

Good animal welfare also requires disease prevention measures, appropriate shelter, management, nutrition, humane handling and humane slaughter or disposal.

In addition, farmed fish and aquatic animals have specific welfare needs and requirements e.g. sufficient flow of water that is of acceptable quality, appropriate facilities, feeding systems that meet the stage of growth, and adjustment of stocking density to minimise crowding and stress/aggression.

Legal Underpinning

Federal law (number 16) of 2007 provides the framework for animal welfare in the UAE. It recognises that the Emirates are the implementers and enforcers and, for the Abu Dhabi Emirate, this responsibility rests with ADFCA as the competent authority. There is also a Federal Executive Bylaw (number 384) of 2008 that provides further details on specific animal welfare requirements.

Local Measures (Codes of Practice)

While the Federal laws provide a framework, it is necessary to develop for farmers more practical information related to the keeping of animals under local conditions. This will ensure farmers are aware of the minimal standards that must be followed, and how they can best achieve compliance. In addition there is the need for ADFCA to implement auditing, inspection and enforcement activities to ensure compliance with the policy.

Codes of Animal Welfare will be developed to enable the full implementation of the Federal law and Bylaw within the Emirate of Abu Dhabi. The codes will detail minimal standards of care for individual species of animal (cattle, sheep, goats, poultry, and camels kept for animal production) and their management practices (farming, transport and slaughter).

The Codes of Welfare will form the basis for compliance, with keepers of animals having a duty of care to ensure animals are being kept according to the specified animal welfare requirements.

Codes should be freely available to animal owners and keepers and training provided where possible so that there is full awareness by all farmers of their responsibility to farm animals.

Audit and Compliance

ADFCA will implement inspection and programmes of audits to verify compliance with the Codes of Animal Welfare, and the Codes will form the legal basis of any enforcement action. Slaughterhouses will have a requirement to notify ADFCA when animals are presented for slaughter in a manner that does not comply with the codes, as will other relevant government agencies such as the Police.

Social support to farmers of animals should be dependent on them complying with the requirements of the Codes, with non-compliance immediately resulting in the cessation of payments for a period to be determined by ADFCA, along with other enforcement action as appropriate.

Roles of Inspectors

ADFCA has the responsibility to appoint inspectors under the legislation in order for role holders to have the powers to inspect and enforce animal welfare regulations. Inspector powers can also be made available to other inspection bodies as appropriate (e.g. SPCA).

5.2.3.5. P14 - Competencies and On-Farm Capabilities**Position:**

ADFCA as the Competent Authority for the agriculture sector in Abu Dhabi is aware of the need for developing the competency levels of key players in the agriculture sector in order to ensure key players are clear on the skills and knowledge levels they require to effectively undertake protection activities. Quality farm production, healthy animals and plants, hence safe and suitable food relies on the competence of all those in the agriculture sector including ADFCA officers, animal health professionals, laboratory diagnostics, Farmers' Services Centre and farmers and farm workers.

In order to have a safe food chain delivering products that meet consumers' needs, the capability of farmers, their farming operations and management practices are all critical success factors.

ADFCA will support programmes that build capability:

- Inside the farm gate
- Across agriculture service providers
- Within its organisation as appropriate.

Rationale:

Identifying and mandating competencies where necessary ensures that those with key roles in the agriculture sector perform their tasks in a manner that leads to quality farm production, healthy plants and animals and plants and hence safe and suitable food.

Farmers are integral participants in the food chain and are the first to handle food in the chain. Their performance (or lack of it) affects the overall performance of the food chain therefore it is critical that they understand and execute their role and responsibilities to the standards set by competent authority and expected by the consumer.

Further, the harsh environment in which farmers operate and the scarcity of some inputs (e.g. water), means that they

have to operate at peak performance if they are to be sustainable. Farmers' skills, farming operations and management practices have to be best in class if they are to survive.

Description:

Farmers have significant influence over the performance of the food chain. If they do not execute their role and responsibilities well, it is more difficult and costly for the remaining participants along the food value chain to correct that underperformance. Therefore farmers have to operate above an optimal level if the food chain is going to deliver safe food that meets consumers' expectations. Without this optimal level of operation, the food chain is not sustainable because consumers will lose confidence. An optimal level of farmer operation requires:

- Growing the right produce that best meets the capability of the farming systems
- Ability to adopt new technologies
- Awareness of the risks they are managing.

In Abu Dhabi, a large part of the agriculture sector is conducted by a wide number of ethnic groups of varying educational ability and language skills. In such circumstances, competencies need to be identified and mandated where appropriate for a number of players. This is intended to enable training to be conducted and educational materials to be delivered as a fundamental component of any agriculture program. Those employed by ADFCA or performing key tasks in related areas (such as training) must be suitably skilled and have competencies appropriate to their functions. In addition there is need for skilled competencies in many areas of farm production and protection, including risk management, diagnostics, animal and plant specialists, along with inspection, audit and enforcement capabilities.

The following sets out expectations in these areas.

On-Farm

As the vast majority of farms are operated by absentee owners, the competency level of farm workers is a key concern for ADFCA.

As the complexity of farming processes increases and the consequence of failure is more likely to result in a significant risk to human health (e.g. over application of chemicals), the competency and training requirements become increasingly critical. ADFCA will provide guidance and training, and may consider in future, if necessary, legislated competencies and mandated training for those in farming businesses and for all farm workers and farmers.

Guidance material is needed to assist farmers meet the requirements of their farming systems and to assist verifiers in assessing compliance with any regulatory program. In addition, ADFCA must ensure that training providers are appropriately skilled and have the necessary expertise to conduct such training.

The competencies required for each farming activity, and each farming sector must be identified. It is important to start with a set of competencies that are seen as the minimum skills and knowledge required by all farmers and farm workers, to achieve safe and suitable food in the Emirate.

Farmers will need guidance on what regulators will be looking for, and how to up-skill farm workers for their particular sector (if required). It is possible that workers who have been involved in farm businesses for a period of time will already have the necessary skills and knowledge. Otherwise, if workers are new to working on a farm, training would

be one way to obtain the knowledge required. Training may also take various forms (e.g. professional training, online courses, "buddy" training, mentoring and in-house courses).

It is important that knowledge and competency is able to be demonstrated in the workplace. Competency is often not able to be demonstrated by attending training courses alone. Neither is meeting competencies a 'one off' exercise for a farm business. The farm business will need to maintain a level of competency at all times, regardless of their verification frequency.

A matrix or competencies table could outline "what" knowledge and skills ADFCA expects from farmers and other farm workers. The "how" will include how the competencies can be demonstrated, and ways they can be obtained.

Service Providers

A number of persons and agencies will be involved in providing services to the Abu Dhabi agricultural sector. These include animal health professionals, importers, suppliers, cool stores, laboratories and processing facilities.

The people need to be suitably skilled, appropriately qualified and may need to be registered. The agencies need to meet any necessary standards in terms of facilities, operations and management and may also need some form of registration and/or accreditation. ADFCA needs to set the appropriate requirements, establish registration systems as necessary, ensure mechanisms are available to deliver requirements, audit arrangements and manage maintenance of skills, qualifications, facilities and operations.

Regulators/Inspectors/Verifiers

Regulators/Inspectors/verifiers must be skilled in standard setting, inspection, audit, managing conflict of interest and maintaining confidentiality, and must have expertise in the particular sector they are assigned.

They must have a thorough understanding of any farming sector programme. In turn they must have a clear and consistent understanding, as far as possible, of what to look for when assessing compliance with the farm's operation. A check list approach of skills to observe in the work place and interview questions to ask farm workers is helpful. Any process developed must be aligned with relevant health and safety requirements.

Training

While ADFCA is not a training organisation, it must be satisfied that the quality and content of training and professional courses on offer or that might be developed are appropriate, comprehensive and effective in delivering the outcomes it seeks.

ADFC must lead in this area by setting frameworks, expectations, requirements of trainers and training agencies.

It is also important that ADFCA assists with ensuring the intent of any regulatory program is understood. One way of assisting consistency is to provide guidance and educational material that can be used, particularly in areas where the subject is not well understood, limited resources are available, or a certain amount of misinformation is in circulation (e.g. safe use of chemicals). It will also be important to provide information on "how to operate under the regulatory program".

It may be the case that the training being conducted in the food sector provides a good model for training in the agriculture sector. It would seem that there is a similar profile of uneducated workers (food handlers in the food sector), business operators, professionals (veterinarians/food technologists and chefs) and regulators (inspectors, veterinarians etc.). This similarity of profile suggests a similar programme may be possible. However, an assessment of the learning capabilities of the farm workers would be particularly important to conduct before embarking on a full scale training and education programme.

In addition there are specific considerations to be taken into account in developing any training capability for the agriculture sector. These include:

Ability to Adopt New Technologies

Given the harsh operating environment traditional farming practices may no longer be sustainable resulting in the need to develop and introduce new practices on farm. Farmers have to be sufficiently skilled to identify and implement new farming practices and technologies. Evidence suggests that it is the ability to consistently execute is where value is eroded. Farmers have to be sufficiently skilled in new ways of doing business in order to take up these new practices. ADFCA will support farmers being given training in new management techniques and the provision of on-going support during the introductory period.

Awareness of the Risks Being Managed

Some of the new technologies that will be introduced will include the application of pesticides and other agricultural compounds to manage pests and/or enhance productive growth. Farmers need to be suitably qualified and aware of the impacts these chemicals can have on the production of safe food. Farmers need to be trained to safely and effectively apply pesticides and agriculture compounds in their farming operations and the associated risks that could be incurred if not managed in accordance with the manufacturers' recommendations. Farmers must also be aware of the risks that zoonoses present to both themselves and to consumers, and be required to operate in a way that minimises zoonoses transmission.

5.2.3.6. P15 – Compliance, Offences, Penalties and Enforcement

Position:

ADFCA will develop a programme specifically aimed at administering the application of a compliance regime across all agriculture production and protection activities. The provision of safe farm production and protection of animals and plants in the Emirate of Abu Dhabi is governed by a number of Federal and Emirate level laws and regulations and in some cases these specify offences and penalties. ADFCA is designated as the competent authority and is therefore empowered to apply the offences and penalties. Enforcement action should be the last resort, with greater effort focused on educating and training of agriculture producers and key players in farm production so they know what is required of them.

In addition it is inappropriate to be providing social support in instances when agriculture producers have knowingly breached farm production and protection regulations.

Compliance

Rationale

Facilitating compliance with requirements is a major responsibility of the regulator. Ensuring compliance delivers outcomes effectively and efficiently without the need to resort to legal enforcement and court proceedings.

Description:

Facilitating compliance can be effected through the application of a range of tools including training, education, advertising, extension services and general support for best agricultural practices. Government's field personnel are well placed to undertake such roles. Encouraging compliance with requirements through positive support and incentives builds success and on-going relationships between ADFCA and those operating in the agriculture sector.

Offences and Penalties

Rationale:

Offences are needed so that those operating in the agriculture sector are clear on the nature of any transgressions they might generate. A range of offences reflects the differing nature of transgressions and the impact of such action or inaction as the case may be. Penalties also need to be graduated to match the hierarchy of offences. They need to be applied transparently and consistently to punish those who transgress.

Description

Offences and penalties will vary according to the risk or harm to both animal and plant health, animal welfare and to public health and safety resulting from the action or inaction of the person or business involved. They will also vary depending on the extent to which the action or inaction is deliberate, as opposed to accidental or unknowing.

Enforcement

Rationale:

Enforcement is necessary when any person in the agriculture sector does not comply with regulatory requirements associated with production, protection, animal welfare or agriculture compounds. It is also necessary when there is deliberate or intentional non-compliance.

Description:

Government can respond to non-compliances in a number of ways: within the verification process, allowing any farmers or farm workers to self-correct with agreed corrective actions; issuing notices/orders/warnings; issuing fines; detaining or destroying animals or plants; suspending or cancelling licenses; or prosecution.

Managing non-compliance requires identification of the most appropriate response in the circumstance and to align the response with the seriousness of the non-compliance.

6. Food Safety & Suitability Policy Framework and Policies

The policy framework is the inventory of policies required to deliver safe and suitable food in Abu Dhabi. These policies form an integrated and complimentary package contributing to food safety and suitability.

6.1 Introduction

The Abu Dhabi Government has embarked on a vigorous process of foremost development and application of International best practice tailored to the Emirate needs, pursuing a set of ambitious aspirations and policy goals. The agreed policy direction recognises and establishes the context for setting of goals, priorities and pursuit of subsequent actions in key sectors covering the full economic and social spectrum.

The development and application of whole-of-government and associated sector policy informs and contributes to setting long term direction, and subsequently in the priority setting and selection of specific initiatives to be progressed, all as part of an on-going dynamic government strategic planning activity.

Two major sectors are agriculture and food safety. The strategic imperatives recognise that agriculture and related food safety is of continuing importance to the Emirate. This embraces various dimensions including provision of sustainable food supply and pursuing opportunities to improve all aspects of production and distribution in turn contributing to food safety and suitability.

The existence of a sound food safety policy framework is a critically important basis to achieving the desired food safety sector outcomes.

The relevant social benefits and business related goals to be achieved include:

- Access to safe and suitable food
- Minimising related health risks
- Enhancing business performance.

In order to ensure effectiveness, the policies:

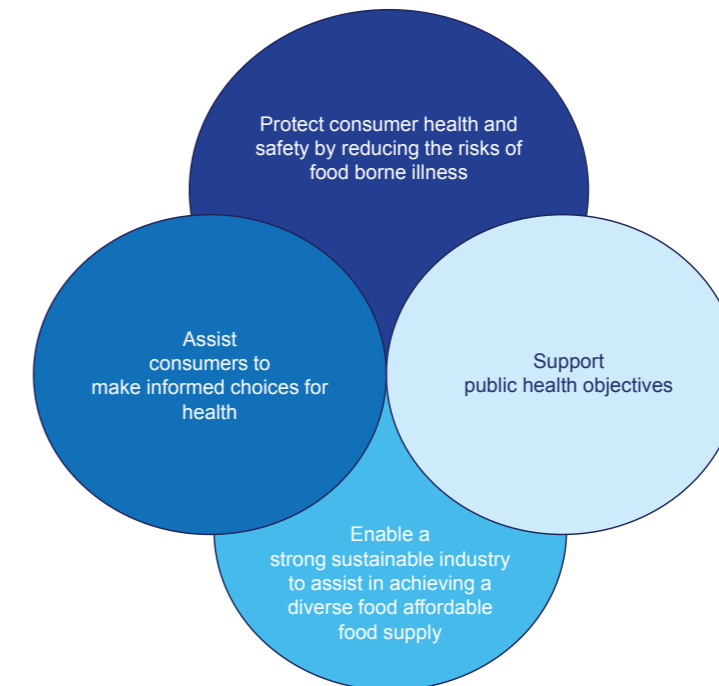
- Embrace the most modern concepts, where relevant
- Are benchmarked to internationally recognised best practice, best suitable to the Emirate
- Contribute to achieving a competitive performance edge on the regional and international level
- Are effectively promoted and the impact monitored to confirm effective application
- Facilitate implementation of new food management programmes in a phased manner, with continuous improvement in food safety and suitability outcomes
- Are tailored to Abu Dhabi's unique situation, allowing for innovation and creativity so that results are recognised as 'best practice'.

Where policy decisions need to be made in relation to food safety and suitability, there are four key considerations that must be factored into the decision-making process:

- Protection of consumer health and safety
- Informed consumer choice for health
- Enable Strong and sustainable industry
- Support overall Public health objectives
- Cost-benefit provisions (regulatory impact evaluation).

Each of these considerations is described in Diagram 32 and in the next page.

Diagram 32: Factors in food safety policy decisions



The goals are:

- Protecting consumer health and safety by reducing the risks of food borne illness. This is the primary goal of the food regulatory program. As a result consumer confidence will be improved and strengthened and decreased levels of food borne illness shall be observed.
- Assisting consumers to make informed choices on food displayed, sold and consumed for their health and wellbeing can be achieved primarily through labelling but also through awareness and education and ensuring information is not misleading.
- Supporting public health objectives that are championed by the health authorities within the Emirate (i.e. reducing obesity, heart disease and diabetes) is achieved within the food area by promoting healthy food choices. Maintaining or supplementing nutritional qualities or aspects of food that respond to specific and significant public health issues also supports public health objectives (e.g. addressing iodine or vitamin D deficiency across the population).
- Enabling a strong and sustainable food industry through ensuring confidence in the food supply, providing a food regulatory program that is efficient and effective and ensuring that such regulation facilitates food trade.

The achievement of the policy objectives is through inclusion of integrated policy themes, including:

- Applying relevant international approaches and standards
- Business operator commitment and responsibility
- Effective public awareness
- Use of a modern risk based approach
- Use of scientific data and tools

- Compliance and enforcement
- Food industry education and training.

Important related policy considerations addressed include:

- Collaboration with various stakeholders, including other UAE entities and international organisations to meet community expectations
- Ensuring consistency, effectiveness and efficiency of the developed policies that further contribute to proactively building stakeholders' commitment, and effective on-going networking and knowledge-sharing
- Creating the basis of the long-term maintenance of integrated policies for the food sector in the Emirate, thereby enhancing overall social and business objectives.

6.2. Food Safety Policy Framework

The general policies apply in the food safety area as they do in the agriculture area. (e.g. risk management applies to the way food issues are addressed. The Food Safety Policy Framework complements this and is the summation of all the food safety and suitability policies that are required to achieve the objectives and aims of the ADCFA relating to food safety and suitability (including halal food)).

The food safety and suitability policies identified below, include 11 specific policy areas which reflect the various dimensions and aspects of the whole system relevant to food safety and suitability.

Each of the policy areas comprises the following

- The ADFCA "Position" that sets out the core ADFCA view on the concept that is within the policy area
- The rationale for choosing the option, the option(s) considered where appropriate and significance in a regulatory program
- A description of the selected policy area, the concept encompassed and the key features.

Diagram 33: Food policy framework



6.2.1. P1 - Accountabilities and Role of Key Players

Position:

ADFCA recognises the significance of accountability to the food regulator throughout the food chain and its mandate in the core regulatory business functions. Furthermore, ADFCA recognises the importance of the food business operator taking paramount responsibility over time for producing safe and suitable food. The time necessary to move all food business operators within the various sectors away from current inspection arrangements will be considerable. However, ADFCA is aware that it will only be through moving in this direction that the food regulatory program will be able to deliver efficiently and effectively on the strategic objectives of ensuring safe and suitable food in Abu Dhabi.

Rationale:

Accountability within the food safety system needs to be clear and transparent in order that each of the key players understands their responsibilities for delivering the strategic objective of ensuring safe and suitable food in Abu Dhabi.

Description:

The following lays down the accountability and responsibility of the regulator for setting requirements and undertaking verification, the food business operator, importer and exporter.

Regulator

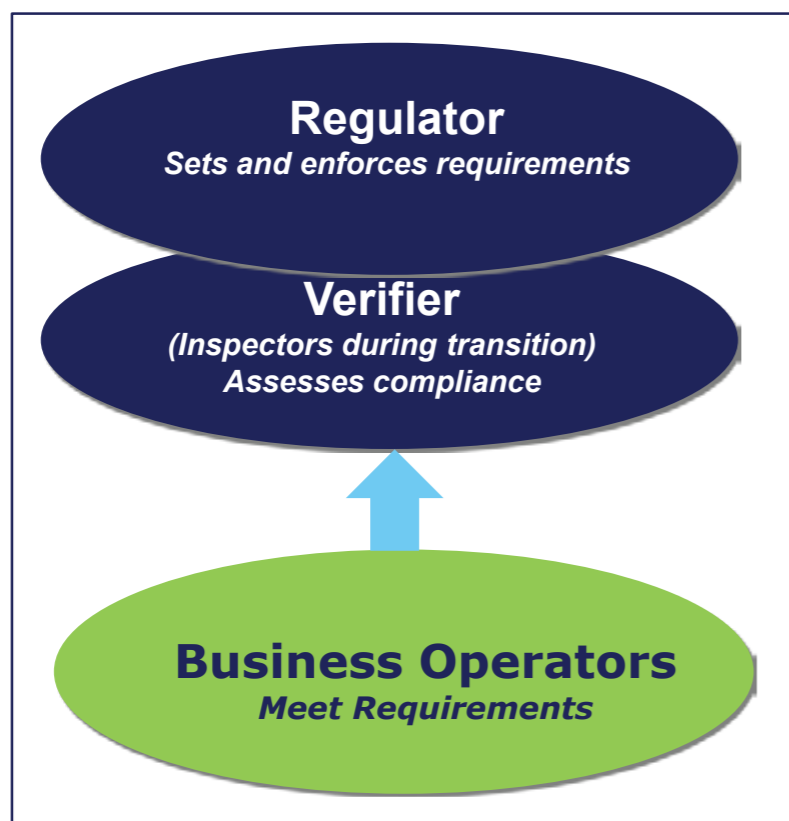
The accountability of the Abu Dhabi regulator is to the Executive Council. This accountability covers each part of the food regulatory program so that through compliance activities, program audits and other measures and controls, the regulator has confidence in the delivery of the safety and suitability of food in Abu Dhabi.

The role of the regulator involves establishing, where practical, the outcomes to be delivered and ensuring the food safety regulatory program delivers these outcomes, is operating efficiently and effectively and is resourced appropriately. Staff within AFDCA has roles and responsibilities to support the regulatory program's operation and range from setting requirements, oversight and implementation to investigation and enforcement.

This includes:

- Establishing Abu Dhabi regulatory requirements that determine safety and suitability of food for sale (including imported food)
- Establishing relevant tools to assist food business operators
- Undertaking border clearance of imported food
- Monitoring and auditing the food regulatory program
- Addressing non-compliance.

Diagram 34: Accountability pathway



Food Officers have the primary role in the regulator's accountability for enforcement of requirements by food business operations within the market and for border clearance of imported food.

The information Food Officers collect contributes to the auditing of the whole food regulatory system by providing feedback to the effectiveness of the total regulatory model. They are also involved in enforcement related investigations where food business operators or others breach requirements and in system audits as to the status of the overall program in terms of whether it is meeting objectives.

Verifiers (Inspectors during Transition)

Verification will be undertaken by ADFCA for the foreseeable future and shall be held accountable for by the food businesses.

The role of the verifier is to assess the compliance of food business operators with food safety management systems that are designed to meet existing and future requirements relevant to their business. For many businesses, the time necessary for them to adopt and operate a food safety management system will entail a lengthy process. It will therefore necessary for risk-based inspection arrangements to continue for such businesses until they make the change. Both verifiers and inspectors (Food Officers in the future) must be technically capable in the relevant industry sector and meet ADFCA competency standards, with evidence of appropriate expertise (training or experience or both). For verifiers this will mean an on-site observation of audit and verification abilities before approval or accreditation.

Verifiers will have the following duties:

- Undertake the functions and activities assigned to the a verifier, in terms of food safety management system audits
- Maintain an appropriate degree of impartiality and independence in carrying out their functions and activities
- Maintain appropriate confidentiality (particularly in relation to commercially sensitive matters) relating to operations and activities in the course of verification (except in relation to reporting within ADFCA)
- Report/record:
 - (i) any failure to comply with , or any inadequacy in, a food management system,
 - (ii) any other matter which might be required to be reported on by verifiers,
- Ensure that they are adequately resourced and that systems are maintained to ensure that their roles, functions and activities are carried out properly
- Undertake verification at intervals as may be set in law or as directed based on the performance of the food business. While verification is being implemented in a phased approach, the current inspection arrangements shall be enhanced to be based on risk taking into consideration the risk factors (i.e. type of food, method of handling, scale of operation and at risk consumers) in determining the risk category of the food business and the associated inspection frequency of inspection.

Third party verification may be considered by ADFCA in the long term.

Food Business Operator, Importer or Exporter

The accountability of the food business operator, importer or exporter is twofold: first to the consumer in terms of the production and delivery of safe and suitable food and second to the regulator in terms of compliance of the business with regulatory requirements.

The role of the food business operator is to meet the following duties:

- Comply with relevant legal requirements and risk management tools issued by the regulator that apply to them (if any)
- Prepare and handle safe and suitable food or, in the case of imports, ensure that imported food meets the relevant requirements
- Identify the source of food and food inputs for the purposes of traceability
- Adequately implement and resource all relevant aspects of the food business (such as competency, staff supervision and training)
- Ensure operations are commensurate with the design and capacity of premises and staffing levels
- Maintain procedures/processes to keep required records and documentation in updated form.

6.2.2. P2 - Licensing, Registration, Accreditation, Recognition, Approvals

Position:

ADFCA recognises its responsibility for relevant aspects, or all of, the licensing (of premises), registration (of food safety management systems), accreditation (of agencies and persons), recognition (of agencies and persons) and approvals (of documents etc.). This maintains ADFCA's confidence in the operation of the food regulatory program in so far as those people operating in the sector, the facilities employed or the things that are used in the sector have met criteria for operation or use to the satisfaction of ADFCA.

Rationale:

Licensing, registration, accreditation, recognition and approvals provide the means of placing responsibilities and obligations on the various stakeholders (in order to facilitate future compliance and enforcement action) and, for things or agencies, the means of ensuring pre requisite or minimum requirements are met prior to use or operation.

Description

For all licensing, registration, accreditation, recognition and approvals, the following will need to be addressed:

- Manner and form of formulating applications and associated processes
- Granting of a licence, registration, accreditation, recognition and approval without or subject to regulatory conditions (and the variation of those conditions)
- Ability to seek further information to assist in making the decision to license, register, accredit, recognise or approve
- Surrender, amendment, suspension or withdrawal of licences, registrations, accreditations, recognitions and approvals – based on appropriate grounds
- An appeal mechanism to review the decline or withdrawal of certain licenses, registrations, accreditations, recognitions and approvals.

The following covers in more detail the rationale and description of licensing, registration, accreditation, recognition and approval.

Diagram 35: Licensing, Registration, Accreditation, Recognition and Approvals Symbols



Licensing of Premises

Rationale:

Licensing currently provides a means of identifying commercial food businesses and establishments located within Abu Dhabi. Pre-requisite approvals are provided by ADFCA for licences to be issued by the concerned authority (i.e. Department of Economic Development).

Description:

Where licensing of premises is led by the Department of Economic Development, ADFCA provides pre-approval clearance of premises. This is set to continue. Any future change in this area will be the responsibility of the relevant leading licensing entity in collaboration with ADFCA, including introducing automated applications and electronic services.

Registration of Food Safety Management Systems

Rationale:

The future Registration of food safety management systems shall address the need to identify food business operators in Abu Dhabi but also extends to deliver an undertaking by the operator that they will meet the requirements of the food safety management system – including undertaking appropriate food handling steps, conduct necessary training, and keeping records, etc. Additionally, registering the management system is intended to shift the focus from the premise itself and the 'inspection based' arrangements towards the food handling activity and the food business operator responsible for the food safety management system.

Description:

Just as there are current prerequisites for licensing, the prerequisites for registering food safety management systems will include:

- Assessment of the management system (if not developed by ADFCA)
- Tailoring of any template management system to match the business activities so that the management system is 'fit for purpose'.

Assessment by ADFCA Food Officers of any food safety management systems that is developed by the food business operator, shall ensure that all the necessary regulatory requirements are covered. Assessment will include consideration of the technical content of the food safety management system, that the food business operator is an Abu Dhabi resident etc. and may be deemed equivalent for implementation by the food business operator

Provision is required for the amendment of a food safety management system where the scope of the business chang-

es or the process/food safety steps change. Such changes are generally characterised as 'significant'. This needs to be reflected in a variation form to the registration for such 'significant amendments'. Provision is also required for re-registration if the business operator changes and suspension of registration at the business operator's request (such as if the business ceases its operations for any reason).

Many businesses operate over a range of sites/branches or operate a range of various activities (e.g. several hotels in a chain or a delicatessen, a fresh food outlet and a packaged food store all owned as a single business). Provision is required for food safety management systems and the consequent registration to cover multi businesses and multi-sector activities.

If registrations are time limited, business operators will be required to keep registrations valid.

Implementing registration will take a significant period of time. A transition plan will be critical to the success and should aim to transition the most advanced/skilled sectors first followed by the next and so on. This allows the least skilled sector time to be trained and up-skilled.

Recognition/Certification

Rationale:

Certain activities or functions within the food regulatory program need to be undertaken by people that demonstrate certain set of skills or attributes. This ensures that the required competencies are met.

Description:

Recognition shall be applied to people who are not government employees but who perform specific functions within the food regulatory program.

The two key areas in the food regulatory program where recognition is required concerns food handlers and food safety management systems specialists/experts.

ADFCA will have the legal authority to recognise or certify people, establish requirements (including competencies of persons) and set operational requirements such as performance criteria, to be met by those people. These collectively are intended to manage particular functions related to business system requirements, and to specify requirements for recognition/certification such as form of application.

ADFCA shall be able to impose conditions on recognitions/certifications and the ability to waive, vary, amend, and remove those conditions and specify the duration (but not including unlimited at the time of granting) of any recognition/certification.

Accreditation of Agencies/Facilities or People within Agencies/Facilities

Rationale:

Certain activities or functions within the food regulatory program need to be undertaken by facilities or people within facilities that demonstrate certain attributes, meet certain requirements or have certain skills. Accreditation may be necessary/ selected for this purpose, to ensure requirements and necessary skill levels are met. ADFCA recognises that setting the parameters for accreditation and exercising such task shall be undertaken at the Federal level, in close collaboration with ADFCA particularly contributing to the technical expertise within the process.

Description:

Recognition shall be applied to agencies or facilities that perform specific functions in the food regulatory system. (e.g. training providers, consulting firms and certifying/accreditation bodies, laboratories).

ADFCA will identify the requirements, parameters and competencies that accredited facilities need to meet.

Approvals of Certain Compounds, Documents, Equipment, and other Things

Rationale:

There may be a need for certain compounds, documents, equipment and other things to be approved by the regulator where those things are essential for the efficient operation of the food regulatory program. It is not intended that this would cover such things as cleaning products or ovens etc. but that, should the need arise, ADFCA will have the legal authority to issue such approvals.

Description:

Approvals of certain compounds, documents, equipment and other things provides flexibility for ADFCA to control a wide range of things used in the food regulatory program should the need arise.

(e.g. there may be a need for approving identification systems or applications, official devices and other related documents and forms for use within the regulatory program. This may be important for identifying import consignments that are cleared for entry or for securing product that has been recalled or that is destined for export, destruction etc.)

6.2.3.P3 – Assessing Compliance – Verification (Inspection during Transition)

Position:

ADFCA understands that the long term position of assessing compliance will be through applying the verification model. In this model, verification is applied to a food business's operations against an approved and registered food safety management system. The model places responsibility for producing safe and suitable food on the food business operator which is the foundation of the food regulatory program.

In the short to interim term, the current inspection model will continue for many businesses and sectors, where compliance is assessed by inspecting a business against relevant prescriptive regulatory requirements. The inspection model is being enhanced to evolve into a risk-based approach. The inspection model will continue for businesses that do not require management systems and can proceed with guiding rules

Verification of a food business operator's management system by Food Officers will only replace inspection once ADFCA has judged that the business operator or a particular sector is capable of operating a food safety management system. A business will either be subject to inspection or to verification. Under the verification model, Food Officers will need to widen their competencies from inspection to verification.

Rationale:

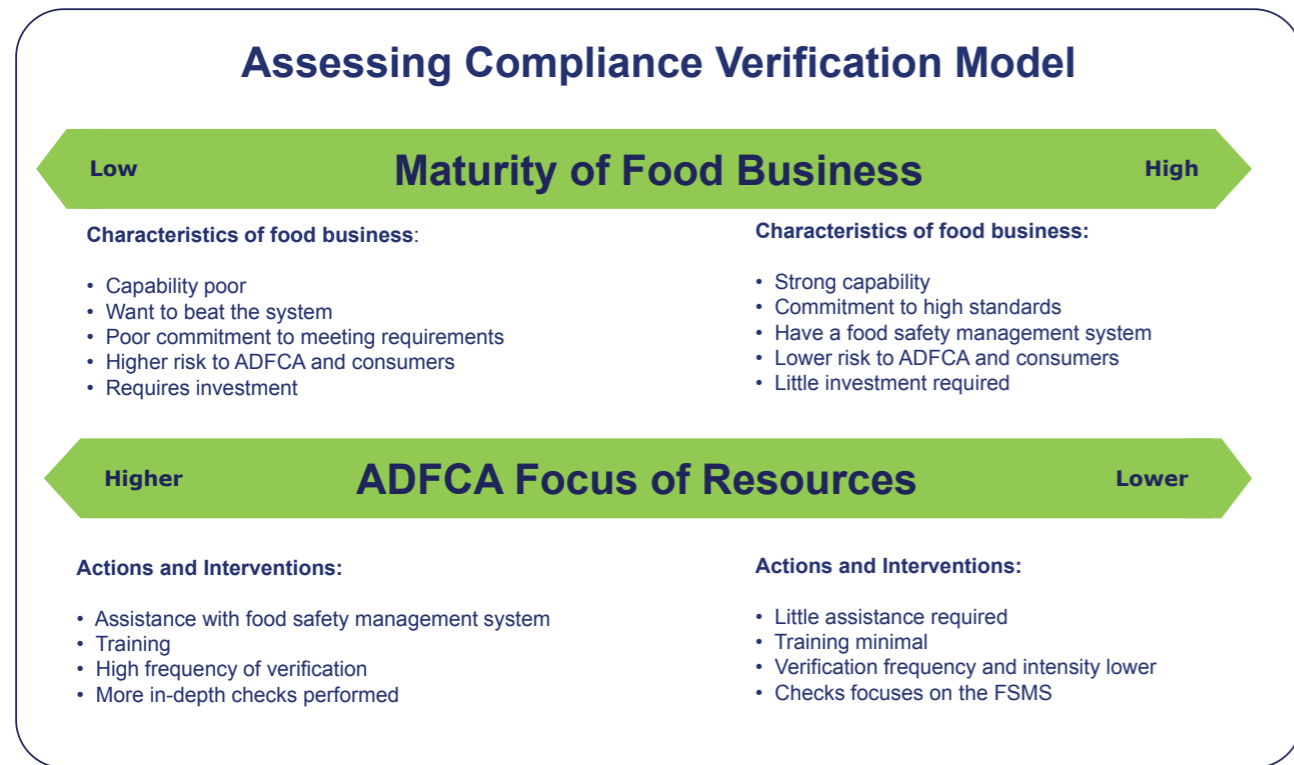
In the risk-based environment of a modern food safety regulatory program, placing the onus of producing safe and suitable food on the food business operator can only be effected if the regulator does not prescribe each and every aspect of the food business operator's activity. The inspection model does not allow this to occur because it controls

all aspects of the business at the time of inspection visit rather than a holistic process based audit. Inspection of detailed and closely prescribed requirements places the burden and potentially liability of safe food on the regulator. Verification is essential in order to give effect to the change in responsibility.

Description - Verification:

Verification is the process of assessing a food business operator’s compliance with the regulatory tools and requirements that apply to that business (i.e. food business operators have systems in place and are able to demonstrate through records of their own checks (internal control systems), that they are using the regulatory tool to deliver safe and suitable food). Assessment of compliance by verification in Abu Dhabi will be undertaken by ADFCA Food Officers.

Diagram 36: Assessing Compliance Verification Model



Verification will be designed to accommodate the degree of variability that exists amongst food businesses and the food safety risks that need to be managed. Food safety management systems contain requirements relevant to business operations that are judged equivalent to the prescriptive requirements currently applied to all food business operators.

The verifier will not only check the food business operator’s management system records, but during the verification process will also ‘inspect’ a sample of the requirements covered by the management system through field visit (‘reality check’). Together the check of records and the ‘reality check’ comprise the verification – the assessment of compliance.

Initial verifications are expected to be of high intensity and frequency. High intensity will involve the verifier ‘inspecting’ a large sample size of the requirements contained within the documented management system. As performance of the food business improves, the intensity will accordingly reduce and the frequency of verifications will decrease.

Verification of the food business operator’s management system will confirm:

- Compliance of the food/feed management system to the legislation
- Compliance of the operation to the documented food/feed management system
- The applicability of the food/feed safety management system to the operation.

Description – Inspection during Transition

ADFCA’s ultimate goal is to move from the current inspection model (inspection against prescriptive requirements) to the future state of food business operators having management systems designed to meet existing and future requirements relevant to their business (with Food Officers assessing compliance against the management system under a verification model). The time necessary for food business operators to make the change will depend on a variety factors but for many businesses this will be a lengthy process. It will be necessary for the inspection model to continue for all those businesses until the change is effected.

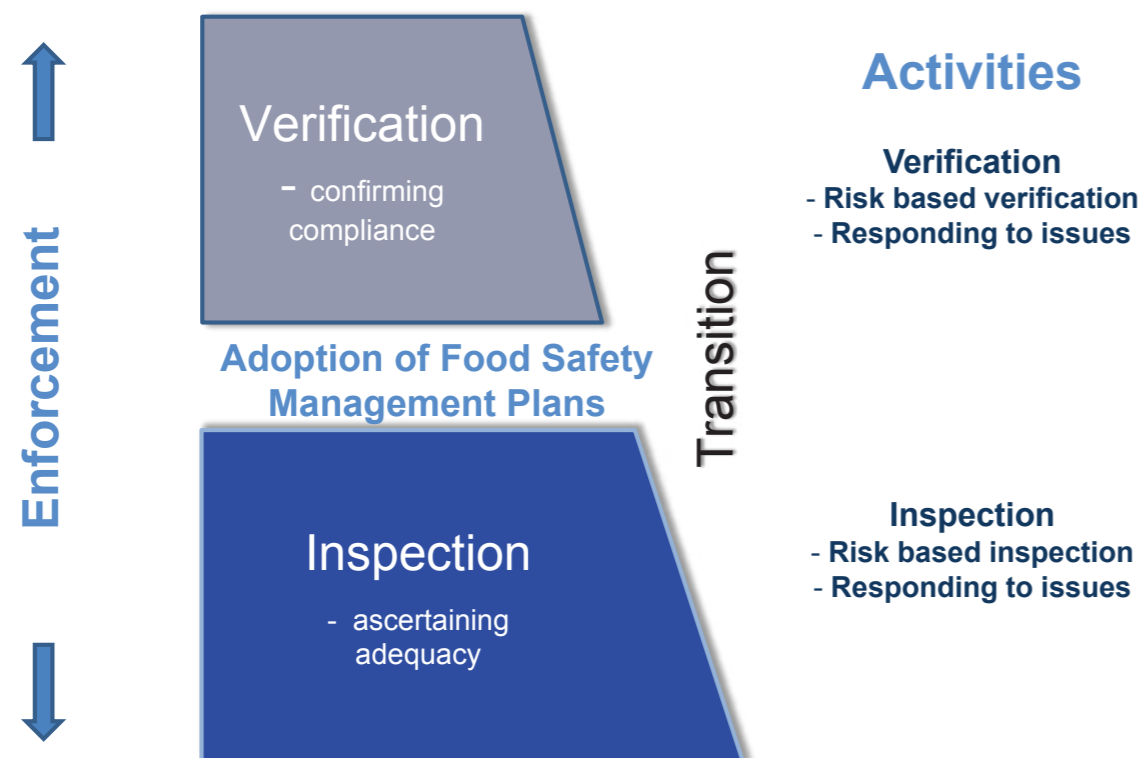
The current inspection model is being evolved into risk-based approach taking into account the type of foods produced, scale of operations, handling methods, at risk consumers and the food business operators’ performance in meeting all requirements to allocate the inspection frequency and level of regulatory requirements involved. This enhancement is also intended to address competency/calibration issues amongst Food Officers.

Inspection of a business will only cease when a business registers their food safety management system and verification begins.

Food Officers will conduct verification to assess the compliance of individual food business operators or operators within specific sectors only when those businesses reach a level of maturity where they are capable of operating risk based ‘food safety management systems’.

Capability will require self-management and record keeping. As government employees, ADFCA’s Food Officers will therefore have a dual role: enforcement (a function of the regulator) and the inspection (short-medium term)/verification (longer term) function.

Diagram 37 – Verification in Transition



ADFCA Food Officers must address three key but generic aspects in verifications: management systems, conflict of interest and audit skills²². In addition, ADFCA will set the technical requirements its Food Officers must meet in both inspection and verification work, such as an understanding of the relevant food law, and (variously) the skills and knowledge of the various business operations (e.g. manufacture of frozen food and cook-chill foods, canneries, pasteurisation, long shelf life technologies etc.).

On-going calibration of the decisions/judgements that Food Officers make when conducting inspections or verifications is a critical component of the food regulatory program to ensure equity in treatment of food business operators and to help maintain the integrity and credibility of ADFCA.

Exemptions from Food Management Systems

It may be deemed appropriate for some businesses or sectors not be required to have nor to implement a food safety management system. In such case, in they will be exempted and subject to risk based inspection model using guiding rules that are appropriate means of mitigating possible risks.

Enforcement Actions

Enforcement actions will continue to be conducted whether through inspection or verification models as it is triggered by the results of compliance assessment where either there is an on-going failure to meet the regulatory re-

²²These are covered for example in ISO Standard 17020 for “Inspection Bodies”

quirements relevant to the food operator’s business, the management system and/or the actions of the food business operator are deemed to be a risk to public health. In such cases, legal action will be required and food officers will exercise their juridical powers.

6.2.4.P4 – Labelling and Composition

Position:

ADFCA realises that labelling and composition is primarily a responsibility on the UAE federal level. Suitability and safety is part of labelling and labelling is vital to provide key information to the consumer. ADFCA recognises the importance of proper labelling; including composition (to provide parameters on the use of substances and ingredients for the manufacturer), contaminants (to ensure the food manufacturer and the food seller do not mislead the consumer) and nutritional information and claims declaration where the consumer has recourse for further information to enable informed choice.

Rationale:

Labelling of food provides the consumer with a significant amount of food safety and suitability as well as nutritional information. Appropriate controls on labelling ensure that the consumer has the information necessary to make purchase decisions that coincides with food safety and healthy choices.

Composition of food deals with the individual components of a food product, whether a whole food such as fruit or a food product such as canned food or a mixed food such as a pre prepared meal. Controls on composition are generally provided for food safety reasons (such as setting maximum levels for food additives) although some decisions are for nutritional reasons (such as restoring vitamins or minerals that may have been lost in food processing).

Description:

Labelling is a cost to the food business operator that are generally passed onto the consumer. Balance is therefore needed on deciding what label information is mandated. Composition standards manage risks to the consumer associated with benefits (such as levels of essential vitamins and minerals) and concerns (such as toxic or hazardous levels).

The elements of a food labelling and composition regime cover six distinct areas:

- General provisions that apply to all food
- Substances that might be added to food
- Contaminants and toxicants
- Foods requiring pre-market assessment (other than substances that might be added to food)
- Microbiological and processing requirements
- Specific food product standards.

The general scope of each of these six areas is described below.

General Provisions

Preliminary Provisions: provisions that apply generally to the labelling and composition regime including a glossary of terms (definitions), units of measurement, glossary of symbols and units and prohibition on altering labels.

Application of Food Labelling: mandates labelling of food for retail sale and sets out exceptions and alternatives such as the provision of information in relation to food rather than labelling (e.g. the information provided about food sold in bulk bins).

Food Identification Requirements: name of food, lot identification (for traceability), name and address of supplier or importer in the UAE.

Mandatory warning and advisory statements and declarations: any mandatory warning statements, advisory statements or declarations required to be made.

Labelling of Ingredients: requirements for naming ingredients and compound ingredients. This mandates that all ingredients be listed by common, descriptive or generic name and that all ingredients be listed in ascending order content contribution to the weight.

Date Marking of Packaged Foods: defines 'best before' and 'use by' date marking.

Directions for Use and Storage: mandates the need to include specific use and storage requirements where, for reasons of health and safety, the consumer should be informed.

Nutrition Information Requirements: identifies foods that require nutritional information and foods exempted from such a requirement. Identifies the nutrition information required e.g. energy, protein, fat, carbohydrate, sodium and may identify the manner of provision.

Health and Nutrition Claims: describes the permissions and prohibitions of health, nutrition and content claims. Nutrition and content claims are less likely to require direct regulator involvement other than to set standards for claims. Some categorisation within the range of health claims will assist in ensuring the regulator focuses on the area that has the greatest impact on the consumer. Potential categorisation might require the manufacturer to hold document substantiating a general level claim (i.e. one not describing a disease). High level claims involving disease statements should be pre-approved by the ADFCA in order to protect the consumer and maintain integrity of the food supply. The regulator may list approved health claims.

Medical claims are outside the scope of ADFCA and is led by the Health Authorities

Legibility Requirements: requires labels to be written/set out legibly and specifies those parts of the label to be presented in Arabic.

Substances Added to Food

Food additives: describes any substance not normally consumed as a food in itself and not normally used as an ingre-

dient but which is added to achieve a technological function. These are pre-approved and may include the permitted quantities to be used in associated foods. Food additives limits are issued by the competent standard setting agency (i.e. ESMA- Emirates Standards and Metrology Authority) on the federal level

Vitamins and Minerals: regulates the addition of vitamins and minerals to foods. Supplementary foods (foods for special groups or for special purposes) might be managed here or under the (special purpose foods).

Processing Aids: describes substances added to foods that do not remain in the final product for consumption. These are pre-approved and are issued by the competent standard setting agency (i.e. ESMA- Emirates Standards and Metrology Authority) on the federal level.

Identity and Purity: prescribes that substances added to foods must meet appropriate specifications for identity and purity as set out in texts such as the 'Food additive specifications issued by the FAO/WHO joint expert committees for food additives (JECFA). Such specifications are issued by the competent standard setting agency (i.e. ESMA- Emirates Standards and Metrology Authority) on the federal level

Contaminants and Toxicants

Contaminants and Natural Toxicants: sets out the maximum limits of metals and non-metal contaminants and natural toxicants in nominated foods which are issued by the competent standard setting agency (i.e. ESMA- Emirates Standards and Metrology Authority) on the federal level. As a general principle, contaminants and natural toxicants should be kept As Low As Reasonably Achievable (the ALARA principle) and this will likely vary between countries.

Maximum Residue Levels: sets out the maximum permissible levels for residues of agricultural compounds and veterinary medicines. Generally makes provision for Codex MRLs. MRLs are issued by the competent standard setting agency (i.e. ESMA- Emirates Standards and Metrology Authority) on the federal level. MRLs are established with a significant safety buffer but are not safety limits. They reflect good agricultural practice in the production sector. As such, common sense needs to be applied to decisions on food that exceed MRLs but where the food is not deemed adulterated or unsafe.

Articles & Materials in Contact with Food: provides permissions for articles and materials to be in contact with food in accordance with conditions e.g. prohibiting the inclusion of things that might cause choking.

Prohibited and restricted plants and fungi: sets out those plants and fungi that must not be added to food or that may only be used as flavourings.

Foods Requiring Pre-market Assessment

Novel Foods: regulates the sale of novel foods and ingredients including:

- Food produced using gene technology: by providing the permissions and conditions of sale and use of products and providing for any labelling
- Irradiation of food: by prohibiting irradiation unless specific permission given and provides for labelling
- Nanotechnology in food by assessing impacts.

Microbiological and Processing Requirements

Microbiological Limits for Food (as performance criteria): sets out maximum permissive levels of food borne micro-organisms that pose a potential risk to human health in specific foods, including sampling plans etc. The microbiological limits are issued by the competent standard setting agency (i.e. ESMA- Emirates Standards and Metrology Authority) on the federal level

Food product standards

Food Product Technical Rules and Standards as Necessary: including specific requirements with various foods such as cereals, meat/eggs/fish, fruits and vegetables, edible oils, dairy products, beverages, sugars and honey, special purpose foods (such as infant formula, sports foods and medical foods), other foods (vinegar, salt, chewing gum). Such rules and standards are issued by the competent standard setting agency (i.e. ESMA- Emirates Standards and Metrology Authority) on the federal level.

Food – Pharma Interface

A key feature of the labelling and composition program is that it covers food in the general food supply. For the vast majority of foods, there will be no question that they are part of the general food supply but for a very small number of products are under a grey area and decisions will be made on whether to be regulated under medicines/pharmaceutical law or food law. This necessarily requires close collaboration between ADFCA and the relevant public health authorities. A system for reaching mutually acceptable decisions on such products will need to be developed as part of the overall food sector regulatory program.

6.2.5. P5 – Halal

Position:

ADFCA acknowledges that for the majority of its population, halal is a paramount ethical matter of their beliefs and culture and is an integral component of food "suitability". ADFCA also recognises there are broader government, Federal and regional interests in this area. Nonetheless, at the Emirate level, Halal features and requirements are explicitly identified within the food regulatory program.

Rationale:

As a predominantly Islamic society, Abu Dhabi needs to ensure that its Islamic population have sufficient confidence

that the foods they consume meet the requirements of Halal.

Description:

For Islamic consumers to have confidence that the food supply aligns with their belief and religious ethics, three key areas must be satisfied:

1. All the food products they consume are Halal
2. There is appropriate physical separation between Halal and non-Halal foods (particularly for red meat and poultry slaughterhouses including those exporting to UAE)
3. Halal foods are appropriately and truthfully labelled. Certification systems are trustworthy and consistent.

In order to meet the consumer demands, the food regulatory program accommodates the provision of non-halal food, through prior approval and permits issuance. It is also built into the management system covering all aspects of «safety and suitability».

6.2.6. P6 – Tools

Position:

ADFCA appreciates that a risk based food regulatory program must be associated with a range of risk-based tools developed by experts in a range of fields. ADFCA is committed to identifying the most appropriate tools, developing them and providing them to the majority of food businesses. ADFCA also recognises that there are some businesses that will choose to develop their own tools and that these will need to be assessed and approved by ADFCA.

Rationale:

Food businesses need to acquire tools in order to document the activities and processes they intend to follow and enhance the competency model of the food handlers in order to comply with legal requirements and to deliver safe and suitable food.

Description:

The key tools that feature in the risk-based food regulatory program are:

Diagram 38: Tools for Food Sector



- **Food Safety Management Systems** – which are intended to comprise food hygiene practice elements, any relevant HACCP component, training requirements, and reporting requirements. ADFCA is challenged by the vast range of multi linguistic ethnic groups operating in the food businesses in Abu Dhabi and strives to develop more innovative approaches to documentation that entails least text, more available languages and visual demonstrations. .

- **Codes of Practice** – which are prepared by ADFCA in consultation with the industry to cover those areas where industry is prepared and able to develop its own risk based food safety management system. Codes of practice set out mechanisms and expectations of systems that would deliver on the strategic objectives of ensuring safe and suitable food.

Codes of practice may be introduced initially as an advisory document to enable proper understanding of the expectations and the entailed time for such transformation.

Meanwhile, codes of practice may be also issued for the sectors or groups within sector that will not require a food safety management system

- **Guidance for industry** – which are prepared to assist industry in areas or interest of the food safety and suitability regime (e.g. Food hygiene, Labelling, etc.).

- **Training Programs for Food Handlers and Food Business Operators** – which includes training programs for businesses that is a fundamental component of the effective implementation of the food safety regime. Training programs need to be preceded by research on the outcomes to be delivered, the needs of the target groups, the level of existing skills and the likely repeat training required and the measures of success.

ADFC may consider on the long term to develop a grading system of businesses. This is a complex process that needs to address purpose (compliance or consumer information), scope (restaurants, caterers etc.), status (mandatory or voluntary), form (scoring symbol, targets, descriptions etc.), assessment regime (conduct, frequency, appeals etc.), interface with performance based verification, visibility (where grading placed), administrative issues (timeliness of certificate provision).

6.2.7. P7 – Competencies

Position:

ADFC mandates the competency levels of key players in the food regulatory program in order to ensure clarity on the expectations as to the skills and knowledge levels required of those players. Safe and suitable food relies on the competence of all those in the food safety and suitability system including the food officers (inspectors)/verifiers, food business operators and food handlers.

Rationale:

Identifying and mandating competencies ensures that those with roles in the food regulatory program are appropriately skilled and knowledgeable to safely deal with food. This is key to delivering safe and suitable food to the consumer.

Description:

In Abu Dhabi, where a large part of the food industry is conducted by a wide number of ethnic groups of varying

educational ability and language skills, competencies needs to be identified and mandated to enable appropriate training to be conducted as a fundamental component of the food regulatory program. Those employed by ADFCA or performing key tasks in related areas (such as training) must be appropriately skilled and have competencies appropriate to their functions.

Exhibitions, events, charities and donations are all considered food businesses and are covered by food safety regulatory program including competency requisites..

The following sets out expectations in these areas.

Food Businesses

As the complexity of food processes increases and the consequence of process failure is more likely to result in a significant risk to human health (e.g. for low acid canned foods that are widely distributed), the competency and training requirements become increasingly critical. ADFCA will provide a mix of guidance, legislated competencies and mandated training for those in high risk and/or complex food businesses and for all food handlers, supervisors and food business operators.

Guidance material is needed to assist food business operators meet the requirements of their food safety management systems and to assist verifiers in assessing compliance with the regulatory program. In addition, ADFCA must ensure that training providers are appropriately skilled and have the necessary expertise to conduct such training.

The competencies required for each food handling activity, and each food sector must be identified. It may be necessary to add and amend competencies as the food regulatory program is implemented. It is important to start with a set of competencies that are seen as the minimum skills and knowledge required achieving safe and suitable food to all food business operators and food handlers in the Emirate.

ADFC identified three levels of activities and attributed them to three key groups of persons involved in the food industry: food handlers, business operators/food handler supervisors and food safety management system specialists. Food handlers are already required to be trained to a minimum level and minimum competency requirements have already been set. Minimum competencies for the other key players will be developed.

Each of these groups of activities requires specific competencies, and the competencies may well be different for each food sector. However, some groupings are appropriate for broader application such as food handlers in the food service and catering sector. For this group, a basic food safety related competency profile could be developed. This would need to address the turnover of food handlers and changes in positions between the various food service and catering sectors as well as the education and language levels. It would need to address a structured qualification model for food handlers.

It is important that knowledge and competency is able to be demonstrated in the workplace. Competency is often not able to be demonstrated by attending training courses alone. Neither is meeting competencies a 'one off' exercise for a food business. The food business will need to maintain a level of competency at all times, regardless of their verification frequency. There needs to be a link between knowledge gained through training, and food safety behaviour in the food business (e.g. the supervisor may reasonably be expected to carry out spot checks of food safety behav-

our, record findings and any corrective action taken). Information on possible means to do this, and the maintenance of training records shall be provided to businesses by ADFCA.

A matrix or competencies table would outline “what” knowledge and skills ADFCA expects from food business operators and other food business staff. The “how” will include how the competencies can be demonstrated, and ways they can be obtained.

Regulators/Verifiers

Regulators/Inspectors/verifiers must be skilled in audit, managing conflict of interest and maintaining confidentiality, and in the particular sector they are assigned. They must have a thorough understanding of the food regulatory program. In turn, they must have a clear and consistent understanding, as far as possible, of what to look for when assessing competency in the food business operation. A check list approach of skills to observe in the work place and interview questions to ask food handlers is helpful.

Food business operators will need guidance on what regulators will be looking for, and how to up-skill food handlers for their particular sector (if required). It is possible that staff who has been involved in food businesses for a period of time will already have the necessary skills and knowledge. Otherwise, if staff is new to working in a food business, training would be one way to obtain the knowledge required. Training may also take various forms (e.g. professional training, online courses, “buddy” training, mentoring and in-house courses).

Training – While ADFCA is not a training organisation, it must be satisfied that the quality and content of training courses on offer are appropriate, comprehensive and effective in delivering the outcomes it seeks. Trainers and food businesses will seek ADFCA for resources and information. ADFCA must lead in this area by setting frameworks, expectations, requirements of trainers and training agencies.

It is also important that ADFCA assists with ensuring the intent of the food regulatory program is understood. One way of assisting consistency is to provide guidance and educational material that can be used, particularly in areas where the subject is not well understood, limited resources are available, or a certain amount of misinformation is in circulation (e.g. HACCP). It will also be important to provide information on “how to operate under the new regulatory program”.

6.2.8. P8 – Incident Response (Recall and Withdrawal)

Position:

ADFCFA recognises the importance of being prepared to assist or lead incident responses. In doing so, ADFCA is aware of the role on the GCC in undertaking incident response at the regional level and the UAE at the Federal level. Meanwhile, ADFCA embarks on developing the necessary protocols and code of practice²³ for food businesses concerning incident management to assist them to meet their responsibilities in this area.

Rationale:

A range of potential food safety incidents exist, varying in their likely threat to human health and impact on the integrity of the food safety program. Systems must be in place to deal with the likelihood of incidents of any nature. ADFCA will be expected to provide the necessary assurances to both consumers and industry alike.

²³Food Incidents and Crisis Management Plan, Code of Practice No. (2)/2009 (ADFCFA)

Description:

A range of potential food safety incidents exist from minor industry or regulator action where there is experience with the issue (routine), through to situations where lives may be threatened with limited knowledge of the cause and how to prevent the problem (major or crisis level). In some situations ADFCA will not have sufficient resources to manage the incident. Systems must be in place to deal with the likelihood of incidents of any nature and ADFCA will be expected to provide the necessary assurances to both consumers and industry alike, in collaboration with relevant authorities, where necessary.

There is a probability that ADFCA will be involved in emergencies where there is a national, federal or regional interest or where other parts of government have primary accountability. ADFCA is developing response protocol that has identified ranging scenarios (i.e. alerts from business operator, local health agencies (such as reported food borne illness), initiated by ADFCA through its compliance activities and from international agencies or other Emirates/Federal level alerts) as demonstrated in the below diagram.

Diagram 39: Sources of Information Concerning Food Incidents



In emergency situations it is critically important that accountabilities and ownerships are clear and there must be appropriate understandings with other Abu Dhabi official entities prior to any emergencies occurring. Such is developed under a Crisis Management plan in collaboration with the relevant federal/emirate level authorities)

Range of Incidents

Incidents will range from relatively minor industry initiated product recalls and withdrawals to recalls initiated by the regulator in response to regulatory noncompliance with the potential for significant harm to human health. Incidents will also range from routine where there is good knowledge and experience in dealing with the incident to much more complex situations.

A withdrawal of food product is affected when it has not entered the consumer market (i.e. it is still in the storage or distribution chain). A recall is initiated when a food product is available on the market and may have been purchased by the consumer. Both activities must be notified to the regulator but only recall is notified to consumers.

An incident may also be triggered as the result of a food borne illness investigation. Again, some of these may be relatively minor, but some may be major threats to the integrity of all, or components of, the food supply. In all cases, procedures are required to ensure food presenting unacceptable risk is removed from sale and that public health, the integrity of ADFCA and the food safety program is protected. Proactive measures to detect unacceptable risks in food

may be introduced, including risk-focused inspections and targeted sampling plans.

Appropriate traceability of product through the production to consumption continuum is key to the control of products that might present a risk and that need to be removed from the market in case of incidents.

Industry Initiated Food Recalls and Withdrawals

Industry initiated food recalls and withdrawals must follow agreed procedures, particularly in relation to notification to the regulator and consumers and timing of notification. Requirements must be clear and unambiguous, including forms to be used for notifications.

Ideally, food business operators must work to minimise product recall through better quality assurance systems and a more responsible approach when defective products are identified. Communication should be a key element of the procedure.

Regulatory involvement must be appropriate to the nature of the recall but must also focus on coordination and ensuring that agreed procedures are followed.

Regulator Initiated Food Recalls and Withdrawals

Industry must follow requirements set by the regulator relating to any recalls or withdrawals initiated by the regulator in response to regulatory non-compliance and where there is the potential for harm to human health. Good communications strategies that inform the public and manage media interest are paramount.

Crises Involving Other Official Entities

ADFCA will be involved in emergencies where there is a national, Federal or regional interest or where other government entities have the primary accountability. It is critically important in these situations that accountabilities are clear and there must be appropriate understandings with other affected official entities. Work is in progress to develop the Crisis management protocol on the Emirate level and seek sharing information between agencies across the UAE and the GCC.

Public health incidents can be the result of a number causes including communicable disease. Where public health problems indicate food as a source of illness, procedures need to be agreed as to the likely response and who has primary accountability. It is important that accountabilities are clear between health and official food entities associated with food and that rectification of the source of the problem is made within the context of the appropriate law. In relation to bio-terrorism threats, ADFCA's will overlap with the accountabilities of the leading federal/Emirate government agencies in relation to criminal activity. There is, however, a need to provide appropriate expertise to identify and assist with the setting up of risk mitigating strategies.

ADFCA will ensure linkages with other government agencies likely to be involved in bioterrorism events are established and roles are clear in a similar way to controls in any emergency or crisis situation. Consideration will be given to both terrorist type situations and the more likely issue of situations arising from 'aggrieved employees'.

Response Preparedness and Management

ADFCA will ensure it has the technical and human resource capability and capacity to respond to any rising emergency. Arrangements will be set up to provide for this capability in the event that ADFCA does not have the resources internally.

A crisis management strategy that includes preparedness or contingency plans is work in progress to ensure that the various official entities, regulators and stakeholders who might have a role or an interest in the issue, work together to understand and manage issues, mitigate risks and maximise opportunities.

A Crisis Management Team set up to manage an issue must ensure:

- Information on incidents is rapidly made available within ADFCA and to stakeholders
- A means by which participants can discuss ways in which incidents can be managed
- A co-ordinated approach is taken on incidents with the aim of preventing confusion and the resultant loss of confidence.

Incidents should be managed under the umbrella of the risk management framework and thus ensure all relevant people are informed at all stages of management of the incident.

6.2.9. P9 - Powers of Officers

Position:

ADFCA Officers, including the Director-General, shall have legislated powers to discharge their responsibilities within the food regulatory program.

Rationale:

The Director-General needs powers to ensure the effective operation of the food regulatory regime. Officers/inspectors also need powers within the food safety regulatory regime to undertake their role.

Description:

The powers of each of the Director-General and officers are set out below.

Director-General

The Director-General is empowered by the law to do the following necessary activities:

- Issue notices and recommend bylaws etc.
- Give directions to officers, and recognized agencies and various people, food business operators and people handling food, including a direction to dispose of specific food under certain circumstances
- Issue privileged statements in the media for the purpose of protecting consumers from food that does not comply with food law.
- Require food business operators to make declarations or statements, supply records or returns as necessary
- Recall food that does not comply with requirements
- Control the movement of food inputs and food where it is suspected that the existence of a hazard or contaminant may impact on public health

- Give emergency directions to business operators, sets of products, food sectors, regions to stop movement regionally – anywhere in the food chain from source to consumption
- Delegate his or her powers
- Appoint persons as officers to perform the regulator’s duties, including ensuring the safety, identity, and truthful labelling of food, and investigating possible breaches of the legislation
- Appropriate powers to do what is required to protect the public according to the objectives of the Food Law No. 2/2008.

Officers/Inspectors

To facilitate officers’ performance of their duties will have the following powers:

- Examine whether food, processes or associated things comply with the law and its requirements
- Draw samples of any food or input or associated things and test or analyse or arrange for that to happen
- Interrupt operations, restrict or prohibit the use of any process, food or associated matter, or other relevant thing
- Direct the business operator or the person in charge to do any reasonable thing for the purposes of determining or ensuring compliance with the law
- Condemn, seize, detain or require disposal of non-compliant food, inputs and associated things, including non-compliant imported product that has not cleared the border or require the business operator or person in control to destroy, dispose of or otherwise rectify food that is not safe and suitable
- Ask business operators to supply records and returns as necessary and examine, copy and remove such documents or records
- Interrupt, restrict or recommend the closure of food businesses as appropriate in the case of non-compliance or suspected non-compliance
- Enter any place for the purpose of determining whether or not any person is complying the food law and enter any place adjoining or in the vicinity of a place used for the production, preparation or selling of food for the purpose of investigating any matter that might constitute a potential contaminant to food
- Direct business operators and other people to identify and hold any food or associated thing until the result of tests and analysis have been assessed or any lawful direction of an officer has been complied with (through a written notice or delivered during an inspection)
- Use or require business operators to use reasonable means to identify or mark any food or associated thing
- Requiring people to assist with the performance of the officers/inspectors duties, for example retrieving information from a computer system, and taking samples, moving food
- Meet the general performance monitoring requirements (i.e. gathering data etc.)
- Require business operators selling food to give their name and address and name and address of business operators from whom he or she obtained the food
- Examine customs entries.

The law also enables officers to seek search warrants or court orders that confer further powers on food officers and/

or the police to enter a place of residence, or other place using reasonable force, and to search and seize materials or documents or records, to take photos or make other representations as evidence, in order to investigate suspicions of an offence. Officers/inspectors are also enabled to order the disposal of food in such places, consistent with the provisions for premises.

The ownership of seized property must be stated in the law. This must be clear for officers and affected parties.

Officers and ‘recognised persons’ (an individual assessed by the regulator as having met criteria and requirements to undertake a particular function) must be able to perform their functions fully without fear of legal action. They must be protected from civil or criminal liability where they exercise their powers in good faith and with reasonable cause.

6.2.10. P10 – Compliance, Offences, Penalties and Enforcement

Position:

The food regulatory program administered by ADFCA has a comprehensive compliance component aimed at assisting businesses reach compliance and an effective offence and penalty regime to deal with those people or business entities that do not comply with requirements.

Presumptions assist this process and enforcement powers ensure the necessary action can be taken when required.

Compliance

Rationale:

Facilitating compliance with requirements is a major responsibility of the regulator. Ensuring compliance delivers outcomes successfully without the need to resort to the justice system or offences and penalties.

Description:

There are a range of tools that can be applied to facilitate compliance including training, education, advertising, extension services and general support for good operating practices. ADFCA is well placed to undertake such a role as well as encourage other agencies to assist with the function. Encouraging compliance with requirements through positive support and incentives builds success and on-going relationships between ADFCA and those operating in the food safety sector.

Offences and Penalties

Rationale:

Offences are needed so that those operating in the food safety sector are clear on the nature of any transgressions they might generate. Penalties need to be applied accordingly to punish those who transgress.

Description:

Offences and penalties will vary according to the risk or harm to public health and safety resulting from the action or inaction or the extent to which the action or inaction is deliberate, as opposed to accidental or unknowing.

Five categories of offences currently to apply to the food regulatory program:

- The most serious offences, which endanger public health or that involve deception
- Offences to Adulterated food

- Offences concerning halal requirements, where pork or alcohol is handled without permission
- Misleading Offences where a person has acted in breach of the requirements of the food safety regime
- Other offences of activity or inactivity which amount to non-cooperation (e.g. obstruction, breach of duties, failure to provide information, etc.).

Penalties must take into account the degree of deviance from the law, the gravity of the potential consequence, and the knowledge of wrongdoing or criminal intent.

A difference in penalties between individuals and bodies corporate, and between lower and higher levels of offences, are necessary to recognise the resources of the transgressor and the risk or harm to public health caused.

Presumptions

Rationale:

The reason for a presumption is the information to prove the contrary is more easily in the possession of the other party than the regulator.

Description:

Legal presumptions reverse the onus of proof from the regulator to the food business operators who might then be charged with an offence. The following presumptions would be useful in the food regulatory program:

- That contents of a package of food conform with the label
- That food articles sold comply with the relevant food standard
- That persons named in certain roles on a package have the liability of that role
- That food found at any premises or place used for the sale of food is in the possession of the relevant 'person' for sale unless the contrary is proved
- A record, return form, application, or other information purported to be kept, completed or provided by or on behalf of any 'person' is presumed to have been kept, provided or completed by that 'person' unless the contrary is proved.

Enforcement

Rationale:

Enforcement is necessary when a business does not comply with regulatory requirements, or has no intention or is deliberately not complying.

Description:

Government can respond to non-compliances in a number of ways: within the verification process, allowing businesses to self-correct with agreed corrective actions; issuing notices/orders/warnings; issuing fines; detaining or destroying food; suspending or cancelling licenses; or prosecution.

Managing non-compliance requires identification of the most appropriate response in the circumstance and to align the response with the seriousness of the noncompliance.

Violation (compliance) orders are prepared by the ADFCA officer with judicial powers and filed with the prosecutor or by application to the Court requiring a food business operator to:

- Cease an activity that contravenes or is likely to contravene the law or any associated requirements
- Remedy or mitigate any adverse effect arising from any action or matter that may be the subject of an order
- Do something that is necessary to avoid, remedy, or mitigate any actual or likely adverse effect arising from any action or matter that may be the subject of an order
- Pay money or reimburse the government for any actual and reasonable costs and expenses that the government has incurred or is likely to incur in avoiding, remedying, or mitigating any adverse effect arising from the failure of the person to comply with a compliance order earlier made.

6.2.11. P11 – Consumer Awareness and Food Sector Education

Position:

ADFCA recognises that consumers have the responsibility for food they purchase or where food events occur in the home or where consumers handle food themselves. It is therefore imperative to the food chain system that an effective consumer awareness strategy is developed and implemented that aims at attitude and behavioural change.

ADFCA also recognises that mandating requirements, for food businesses do not lead to changed behaviours which require time. Hence, a food sector support program entailing education and support is needed to assist in effecting change.

Rationale:

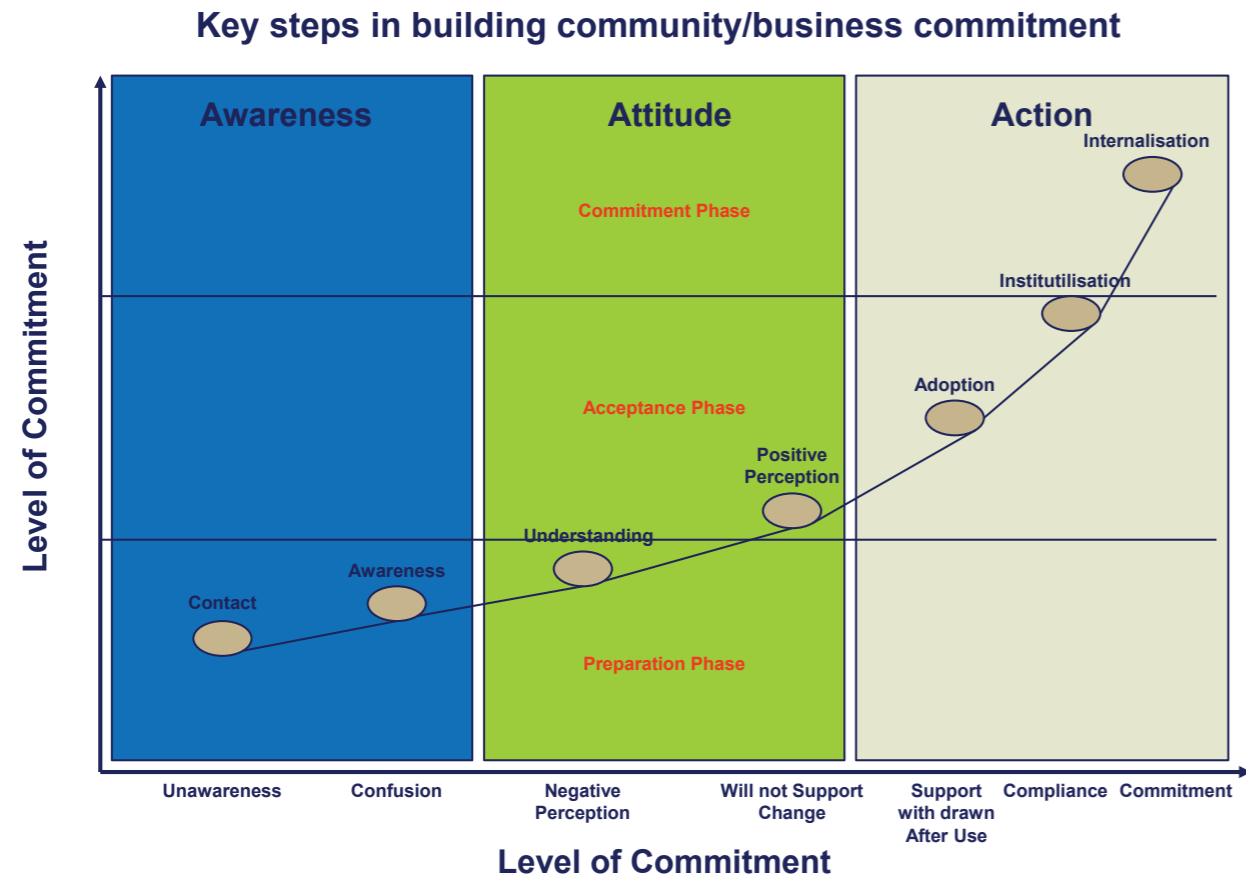
Consumers need assistance to ensure they deal with food safely for themselves and their families. The food sector needs assistance and guidance to comply with requirements and to take responsibility for delivering safe and suitable food.

Description:

The following sets out key considerations of consumer awareness and food sector education strategies. Strategies are needed for each that includes objectives, content, and methods of delivery, implementation and evaluation.

The diagram in the next page describes the level of commitment over time as a factor of awareness, attitude and action.

Diagram 40: Key steps in building community/business commitment



Consumer Awareness

Consumer awareness programs need to take into account the particular features of the target consumers and reflect the lessons learnt on consumer psychology and capacity to absorb information and transform it into actions. Of particular relevance to Abu Dhabi is the ethnicity of the population, the educational level and the rate of change across the population. Demographics are therefore a key input. Not all groups in the population can be reached at the same time or to the same extent. ADFCA's consumer awareness strategy needs to be targeted, realistic, step-wise in order that resources are not spread too thin and that learnings from one campaign can inform the next. The messages need to be short, effective and memorable. In many cases, this limits the message to three words or phrases.

Delivery of food safety information needs to be as varied and innovative as possible in order to reach the target audiences in ways where assimilation of messages is most effective. This might mean television, radio, print or hands-on. The more engaged a person is in a campaign the more memorable it is.

Food Sector Education

ADFC will support the food sector as much as possible throughout the implementation of the food regulatory pro-

gram. Much of this is covered in (P7- Competencies). In addition, food businesses need to be aware of their obligations, of changes and of the expectations of the regulator. This is quite separate from the mandated competencies and is non-regulatory supportive and coaching etc.

As with consumer awareness, key features of a food sector support strategy will address features of the target food businesses (this will differ according to the different groups in the sector), food business profiles, education levels of food business operators and other persons in the sector, and modes of delivery and engagement.

