

An Islamic perspective on food security management

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Abstract

Islamic regulation has a balanced management approach to food management and towards attaining sustainable food security. This approach includes many social, spiritual, resource supply, security, and institutionally-related perspectives. If harmonization between Allah's¹ orders and Moslem behavior was maintained, either within or outside an Islamic state, food security would already be happening, succeeding, and sustaining, regardless of time or space. An institutional structure to maintain this harmonization with regard to food security management in an Islamic State was proposed, including three interconnected departments responsible for interrelated administration and duties: a Moslem Treasury Department, Department of Food Reserves, and Department of Social Affairs. The three departments would be governed by a Moslem Council of Consultants. A thorough discussion of the Islamic view of food security and related water policy implications was presented including the leading rules and specifications, the administrative aspects required, procedures used and guiding directions for proper development and planning.

Keywords: Food; Hunger; Islam; Management security; Poverty

1. Introduction

There is no universally accepted definition of food security. Food security means different things for different human beings and societies, and is understood differently by institutions, experts and scientists. Some authors make a distinction between absolute and relative food security: absolute food security meaning food production within a single country, equivalent to or greater than domestic demand, and relative food security meaning the ability of a State or group of countries to provide goods and food-stuffs in whole or in part (Baz, 2008). Food security is defined in this paper as the state in which food (sustenance) is available to all members of society, in reasonable quantities allowing enough sustenance

¹ Allah (in Arabic) = God (in English)

and natural growth, and of a safe/acceptable quality that will not cause diseases or toxicity, all year round and at an affordable price/cost.

Worldwide, hunger strikes more than 840 million people and food insecurity is becoming a major worldwide problem. Hunger saps strength and dulls intelligence. It destroys innocent lives, especially those of children. By weakening a nation's workforce, hunger cripples a nation's growth (Persley & Doyle, 2001; FAO, 2004). Most hunger-affected countries are located in Africa, south-east Asia, and the Middle East, with a high Moslem population (FAO, 2006).

It is important to note the Islamic concept of change: that Allah changes not the conditions of a people (including the availability of bounties and food) until they change what is in their souls, i.e., their behavior and compliances (Qura'n, 13:11; 8:43). Equally, it is important to note that a successful historical record of implementation of Islamic regulations for more than fourteen centuries led to advancements in social and material conditions (including food availability and security), resulting, ultimately, in the establishment of an Islamic civilization which exceeded all previous civilizations (including the Roman) in its expansion, resilience and achievements (Safi, 1994; Al-Hassani, 2006). Moslems represent about one-fifth of the world's population (Encyclopedia of Islam, 2004) and it is important to know: (a) how Islam analyzes and resolves food security for Moslems and for the world's population, whether today or at any time; and (b) what has caused the present distortions in food availability and the poverty levels in Islamic societies.

Allah tells people (Moslems and non-Moslems) that the book he sent them, the Qura'n, includes all needed management particulars and rules for all aspects of their life and related activities (Qura'n, 6:155; 11:1; 14:1; 18:49; 38:29; 41:3; 57:22). This includes food management particulars and rules. However, these are not listed in a separate chapter or section of the book, and people should seek to understand these particulars and rules and derive the needed management framework which suits them, over time and space.

The objective of this paper is to examine and evaluate the Islamic perspective of food security management including its relation to social, security, food production, use and storage, and Moslem behavior and beliefs. It will also present and discuss the author's perspectives on management and institutional options for attaining food security within an Islamic State as well as elsewhere in the world.

2. Methodological approach

The thoughts and concepts presented in this paper were deduced from the reading, analyzing, sorting and grouping of meanings and interpretations of the holy Qura'n verses. One source of the Qura'n (a translation/interpretation reference) was used throughout the study: Tafseer Al-Jalalein (Mahali & Sayouti 1990) as presented in the computer program Sakhr (1997).

Islamic perspectives towards food security are presented in the next three sections. Section 3 is a presentation of key Islamic perceptions related to food and food security, whilst Section 4 includes a presentation of the previously developed Islamic Approach to Environmental Management (IAEM) and its adaptation by Moslems either at State level or individually in their everyday lives and activities to attain food security. Section 5 is a discussion of food security and water policy implications.

3. Islamic food-related perceptions

3.1. Social–spiritual perceptions

3.1.1. Charity and poverty. In Islam there are two types of charity: regular (called zakat, which is obligatory) and voluntary (called sadaqah, and which is willingly given by Moslems). Moslems are commanded to do no more than: to worship Allah, offering Allah sincere devotion and being true (in faith); to establish regular Prayer; to practice regular Charity; and that is the religion right and straight (Qura'n, 98:4, [Figure 1](#)).

Food and sustenance charity in Islam is ordered by Allah for those in need (Qura'n, 2:273; 71:24; 41:19; 30:38; 17:26). Islam is rich in rules, orders and practices asking Moslems to give and share their sustenance with others in society and, accordingly in a Moslem society, social equity is maintained and poverty is minimal, if Islamic practices are followed (Qura'n, 64:7; 63:10; 34:29; 22:28&34; 14:31; 9:3; 71:24; 41:19; 30:38; 102:8; 17:26).

3.1.2. The right to food. It is stated that bounties of and from Allah (including food) are given freely to all creatures (regardless of religion) and not denied any one of them (Qura'n, 17:20; 39:36). Also Allah assured all creatures including humans that there is sufficient sustenance for all on earth (Qura'n, 38:44; 11:6).

3.1.3. Islamic food practices and values. The following Islamic food practices and values are obligatory and found to be directly related to the prime Islamic pillars such as a Moslem's faith, righteousness, destiny and dignity, meaning that food security has a high importance and weight in Islam and Moslem daily practices:

- It is forbidden for Moslems to repulse petitioners including food petitioners (Qura'n, 93:10);
- A friend should give and share his sustenance with friends without waiting for them to ask for his support (Qura'n, 70:10);
- In giving and sharing, Moslems should seek the needy, especially those who are shy or do not ask for sustenance (Qura'n, 16:46; 2:273);
- Giving and sharing by Moslems should first be for parents and kindred, and orphans and those in want, and for wayfarers (Qura'n, 2:177&214);

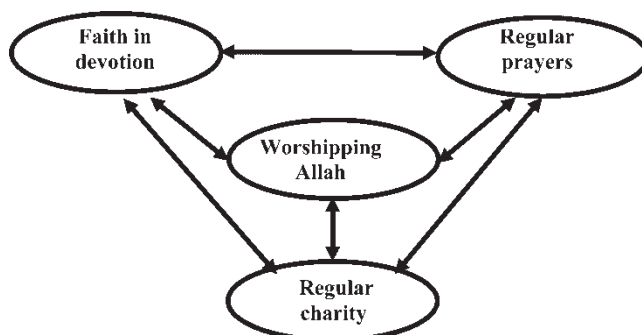


Fig. 1. Schematic of major Islamic obligatory principles.

- Sharing and giving by Moslems is a loan to Allah and Allah will reward the doers in manifold (meaning many times) ways of what they give (Qura'n, 47:11&18);
- A Moslem should give for the benefit of his own soul and to run away from material thinking (Qura'n, 64:16);
- A Moslem should give and support the needy secretly and openly (secretly is better), in the hope of a transaction with Allah that will never fail (Qura'n, 34:29; 16:74; 14:31; 13:22; 2:267, 271 & 274). This giving and sharing should not be followed by reminders of their generosity or with injury (2:262; 23:72; 11:29; 9:48 & 98);
- A Moslem should not be covetous (greedy/desirous) or feel bad or hate the process of giving and sharing of his sustenance with others in need (Qura'n, 9:46; 47:24; 4:37);
- A Moslem should give and share from his sustenance (food/nutrition) the part he likes most or the best quality of what he has (Qura'n, 3:92; 2:267).

3.2. Perceptions of food supply

There is no place in Islam for wasting any natural resource or being extravagant, and Moslems should not act as niggards or be niggardly. Moslems should also use resources including food without extremes, in balance, and in measured quantities (Qura'n, 24:67; 20:81; 7:31; & 6:141).

There is a clear distinction in Islam between lawful food allowed to Moslems and unlawful food not allowed to Moslems (Qura'n, 10:49; 16:114; 4:1, 4, 87, 88, & 96; 2:168).

Allah allows and orders people to care about food quality in all forms and stages of handling: from choosing soil for cultivation (Qura'n, 7:48); storing pure/good food (Qura'n, 8:37; 4:100; 3:179); to eating good fresh food (Qura'n, 3:141; 7:147; 20:81); or using food wisely (Qura'n, 20:81; 17:27; 3:141; 7:31; 4:6).

Mischief (including food mischief meaning malpractice, harm/damage/pollution and misbehavior) is not accepted in Islam and not loved by Allah (Qura'n, 28:77; 2:204). Allah calls upon people not to commit mischief in any form, and a Moslem should therefore not commit mischief (Qura'n, 2:60; 7:74 & 84; 11:84; 26:183; 29:36).

Moslems have to respect Allah's bounties and graces given to them, to know their limits, power and authorities, and to store and reserve food for hard times (Qura'n, 10:24; 14:21).

3.3. Security perceptions

'Peace upon you' is the phrase used in salutation by Moslems (Qura'n, 36:48; 33:44). In the Islamic faith, Allah is the source of peace (Qura'n 49:23). This is an indication of the place of compassion and peace in Islam.

In the Qura'n, Allah tells people that He feeds people, preventing hunger, and provides safety and peace, keeping them from fear (Qura'n, 106:4 & 5). However, this condition of change in sustenance was associated in the Qura'n with various accounts related either to Allah's management or to people's works (Qura'n, 42:12; 34:36 & 39; 30:37; 39:42; 29:62; 28:82; 17:30; 13:26).

3.4. Institutional perceptions

3.4.1. Individual versus collective responsibility. Although in Islam it is clear that no Moslem should bear the burden of another Moslem (Qura'n, 43:38; 39:7; 34:18; 17:14; 16:24; 6:164), Moslems in

Islamic states or societies conduct their affairs by mutual consultation (between each other) and distribute their sustenance to the needy (Qura'n, 42:38; 3:149).

Moslems should refer matters related to public safety, or the handling and management of fear, to those charged with authority amongst them (Qura'n, 4:83), i.e. the Islamic State leadership. Moslems should also obey and follow the decisions of those charged with authority, or their Islamic leaders (Qura'n, 4:49; 24:41). Food security is considered by the author to be a part of public safety or fear, and, accordingly, the main responsibility of food security in an Islamic State or society falls on the State, and not onto individual Moslems.

3.4.2. Moslem House of Wealth (Treasury). The Moslem 'House of Wealth', or 'Treasury' in contemporary terms, was established at the start of the Islamic State or rule. However, this treasury was first institutionalized during the Khalifeh Omar Ibn Al-Khatib (1410–1420 years ago) to handle regular charity along with other State taxes and income. Handling of regular charity here means collecting, storing and distributing charity amongst the needy, according to various classes and levels. After the Khalifeh Omar Ibn Al-Khatib, several upgrades were made to the work and control of the Moslem treasury.

3.4.3. Moslem food market. Prophet Mohammad's first command when he reached Madina city (the beginning of the Islamic State) was to create a market for Moslems, including a food market (narrated by Abu Sa'eed al-Khudary, in Bukhari). This indicates the high importance and priority of food management in Islam and in a Moslem's life.

3.5. Summary of Islamic food-related perceptions

It is clear from the previous sections that:

- Moslems should share and give their sustenance, obligatorily and/or voluntarily;
- food is a right to all in Islam, and should not be withheld from anyone;
- there are high Islamic practices and values for food handling, giving and sharing;
- there is no place in Islam for wasting, polluting, deteriorating, or overeating food;
- 'Peace upon you' is the first phrase and action for any Islamic and non-Islamic relation;
- food should be stored in good times for use in hard times;
- there is a clear definition and distinction between individual and collective responsibilities related to food in Islam;
- there is a clear institutional framework for food management through the Islamic House of Wealth (Treasury) and market and, accordingly, the management of food in Islam is proper and maintains equity, quality, sustainability and security.

4. A derived management model and its adaptation

4.1. An Islamic management model

Previous work by the author identified the IAEM and the Islamic Approach to Environmental Education (IAEE), and adapted them to the development of scientific research (Haddad, 2000, 2006,

2011). IAEM is based on a balanced, tripod-type structure, which constitutes the framework of the approach. In this structure, the head represents a nucleus, consisting of all Allah's management rules and regulations, and the three interrelated legs are resource creation management, resource utilization management and the resulting impacts of both managements (Figure 2). As applied to food as a resource, the three legs of the tripod represent food creation, food use, and Allah's decision and judgment on work done (Al-Jazaa or Ajjir) – each of which is addressed separately below.

4.1.1. *Food creation.* Allah created food in all forms:

- Allah created resources including food as a means to enable sustenance: good in quality, easy and simple in structure, that enabled creatures to use it (Qura'n, 14:20; 10:31; 39:4; 2:22; 16:72; 40:64; 8:26; 7:10 & 44; 71:19 & 74);
- Allah created resources including food available for development and use for all creatures and for different purposes and use (Qura'n, 44:4; 44:12 & 13; 14:32);
- Allah created resources including food available in sufficient measured quantities (Qura'n, 31:20; 14:21; 38:44; 17:30; 39:36; 3:27);
- Allah created resources including food in a way able to change in state, shape, color, touch, structure, etc. (Qura'n, 67:14; 41:10);
- Allah created resources including food as a test to their users/producers. Allah tells Moslems that resources are given to them free but as a test of their deeds, to test which of them will do most good with the resources (food) by providing better, more beneficial deeds (to themselves, to people and the surrounding environment) (Qura'n, 2:155; 11:7; 18:7; 67:2).

4.1.2. *Food use.* Although Allah allow provisions (of food) in due measure and quantity (Qura'n, 42:27), in seeking sustenance and subsistence, Moslems should stay within the limits of their needs, using resources in specific quantities and without over-spending or use (Qura'n, 2:143; 24:64; 7:31; 47:24; 44:8; 44:9; 17:26; 17:27). These provisions sometimes include elements such as fear and hunger, or some loss in goods, lives or fruit. In such cases, Allah asks Moslems to remain patient and try to do good deeds (Qura'n, 2:144).

Moslems are given all natural resources, personal goods and graces from Allah such that Moslems should work for their subsistence and sustenance to sustain in this world (to live, grow and be healthy) and in the hereafter (to use it wisely, think about the creation of food in search for its development, and thank and

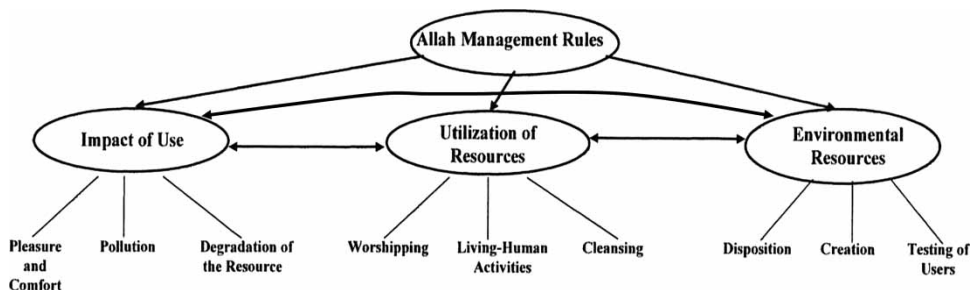


Fig. 2. Diagram illustrating the Islamic Approach to Environmental Management (IAEM).

praise Allah for His giving and enabling of food). The request or demand for Moslems to work is conditional on a specific quality of work or practice: best and righteous deeds with good conduct – deeds beneficial to the society (Qura'n, 67:2; 47:31; 18:7; 11:7; 7:168; 6:164). Moslems need to do their part in seeking sustenance, such as cultivating or irrigating the land and then ask Allah for support (Qura'n, 28:24).

All gains or earnings of a Moslem from their livelihood should be gained in line with faith, and aimed at doing righteous works not mischief, and considered as a bridge or passage to life in the hereafter where a decision on their deeds will be made by Allah (Qura'n, 39:74; 38:28).

4.1.3. Allah's decision and judgment on work done (Al-Jazaa or Ajjir). The decision and judgment of Allah about a Moslem's work, or the impacts/outcomes resulting from a Moslem's food production activities or use, include one or more of the following:

- destruction, misery or mischief of the resource, meaning any unacceptable food resource management activities such as overuse, pollution or inequalities which would result in either destruction and/or misery and/or mischief of the food resource (Qura'n, 28:48; 30:41);
- limiting a Moslem's life span (Qura'n, 20:124);
- providing celebration, pleasure and joy to Moslems (Qura'n, 22:37, 17:9, 9:104);
- the unfailingness of a Moslem, being successful in their work/life (Qura'n, 94:6; 84:24);
- providing forgiveness to Moslems and most generous sustenance (Qura'n, 34:4; 40:40; 33:31; 24:26; 64:11; 22:40; 30:44 & 45);
- providing security (for well-behaved Moslems) and/or insecurity (for badly behaved Moslems) (Qura'n, 34:37; 16:112).

4.2. Model adaptation to food security

The following sections show the main aspects related to the adaptation of IAEM to food security.

4.2.1. Resource creation management

(a) The balance between resource availability and use

Under the Islamic approach to environmental management as applied to food production and use, the status of an environmental element or resource including food (availability and quality) relates to and interconnects with its utilization (in seeking, attaining and distributing sustenance) and, consequently, with its impacts presented by Allah's judgment and decision on work done by an individual Moslem. Therefore, if Islam is applied and respected, a balance in resources availability, their use, and the sustainability of their quality and quantity will be maintained with time.

(b) The internal control of an individual Moslem

In Islam, Moslems are characterized by self-control from being under continuous testing and observance by Allah, to behaving according to his principles and using the resources given to them by Allah in balance, and in the best manner and for the most beneficial deeds possible. Individual Moslems will be asked by Allah in the hereafter about their hands, legs, minds, ears, eyes, mouth and other organs,

and how they used them to do righteous and beneficial deeds (Qura'n, 28:77; 11:7; 11:61; 67:2; 94:4; 44:60; 39:18; 24:38; 16:90; 62:10; 10:26; 21:34; 7:168).

Parts of the messages and teachings of the prophets sent by Allah were to teach people how to behave with a high human quality and in purity (Qura'n, 2:129; 2:141; 3:164; 62:2). Self-purification and a high quality of behavior in all Moslem activities, including those related to food, is a requirement for Allah's acceptance of a Moslem's work and for giving high rewards to Moslems (Qura'n, 91:9; 87:14; 80:7; 34:18; 20:76).

(c) *Temporal and spatial applicability of the model*

Islam considers the people of the earth to be one nation and the Qura'n to be the reference manual for operating, maintaining and resolving matters, differences and conflicts for all people and all aspects of life (Qura'n, 2:213; 4:104; 4:47; 16:64). Therefore, the above food security model should be applicable any time and anywhere in the world, as far as Islamic rules are respected and maintained. If Islamic rules are not respected and maintained, the impacts will include qualitative and quantitative deterioration of the food resources and people will suffer grief and food insecurity.

4.2.2. Resource utilization management. For the Islamic food security model to work, harmonization needs to be reached and maintained between the two groups of actions/orders: (a) what Allah ordered and guided; and (b) what the everyday activities of Moslems should be. This means that if Moslems follow without mixing or confusing their belief with wrongdoing, sustenance will be available for all and will be enlarged as the needs of society enlarge. And as a result, food security would succeed and prevail. For efficient harmonization, the following institutional, administrative and use management aspects have been identified.

(a) *The responsibility of the State*

There is a clear balance between the role or responsibilities of the Islamic State and Moslems concerning food: on one hand, the main responsibility for food security in an Islamic State or society falls on the State and not on individual Moslems, with the harmonization process falling on the shoulders of the Islamic State leadership; on the other, there is a responsibility on every individual Moslem to work to obtain his sustenance including food. Therefore, food production, processing, distribution, storage and other related works should be undertaken by all Moslems. Attaining food security in an Islamic State is thus the responsibility of the State, from a management point of view, and of the individual, from an implementation point of view. This is a top-down management approach (from the leadership to the people).

(b) *Institutional/administrative set-up*

An efficient administrative/institutional setup should be established by any Islamic State to make such harmonization processes work, and work with high performance. This is a very important issue at a time when Moslems are rapidly increasing in numbers and food availability for them is getting harder and harder.

There is a previous successful experience of Moslems in this regard: the Moslem Treasury, which handled Moslems' regular charity along with other State taxes and income, was created by a Moslem leader and not ordered directly in the Qura'n or by the prophet Mohammad. Therefore, the use of the Moslem Treasury at present should be reviewed and possibly upgraded to face current and future food security challenges.

With this aim, and using selected guiding principles stated in the Qura'n:

- regular charity and other taxes should be collected from or given by Moslems (Qura'n, 73: 20; 9:103; 63:10; 2:110; 2:43) preferably based on faith (Qura'n, 34:37; 4: 38; 18: 46; 2:262, 264 & 274);
- sustenance including food and money should be earned by able Moslems through beneficial/righteous works and by the development of natural resources provided to them by Allah (Qura'n, 67:14; 79:34; 43:39; 77:43; 39:74; 29:7; 27:19; 23:41; 20:112);
- the needy and poor living in an Islamic State have a due right to a Moslem's wealth including charity (regular and voluntary) and other State taxes and income. 'Right' here means support (in financial and/or other forms) to cover all their needs allowing them to live in dignity (Qura'n, 70: 24 & 25; 41: 19). This right does not include those poor in understanding, who have the right in food and clothing only (Qura'n, 4:4).

A structure of three interconnected (in terms of administration) and interrelated (in terms of duties) houses, departments or funds, are proposed: the Moslem Treasury, Department of Food Reserves, and Department of Social Affairs (Figure 3). The three departments or funds would be governed and directed by the council of consultants (the government in an Islamic State).

The Moslem Treasury would be the same as before, handling Moslems' regular charity along with other State taxes and income. As in modern treasuries, various units within the Treasury could be created to handle various financially-related matters.

The Department of Food Reserves would be responsible for setting policies, strategies and action plans needed to attain the equilibrium between food demand and production, and to assure the storage of needed crops of an appropriate quantity and quality. This does not mean that the Department of Food Reserves would be responsible for food production, processing, storage and other related works but will guide and direct the process. Amongst other things, the Department of Food Reserves needs to estimate, predict and monitor: (i) food needs; (ii) governmental arable land distribution and use; (iii) vegetative and animal food production; (iv) sea food production; and (v) food storage capacity of a quality and quantity comparable to needs. A special unit within or independent of the food reserves department should be set up to oversee food quality standards and monitoring; the work of this unit could include food quality management at production, processing, storage and selling sites.

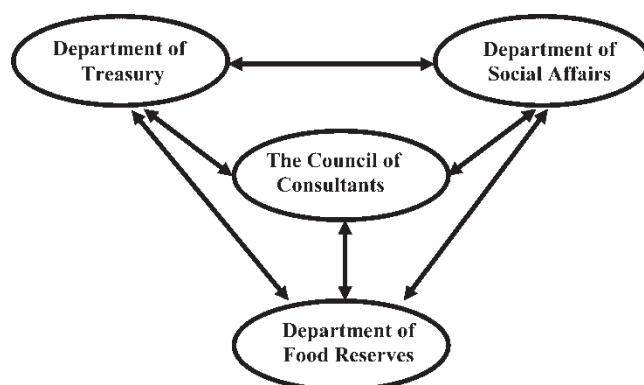


Fig. 3. Schematic of proposed institutional structure.

The Department of Social Affairs would be responsible for knowing about society and its needs for education, employment, health, housing, transport, etc. This department would also be responsible for the identification and classification of Moslems within the State. According to this classification, an identification of the needy or poor can take place, and a direction to the Department of Food Reserves and/or the Moslem Treasury will be given to support this class with appropriate funds and food.

The Department of Social Affairs will rely on a detailed database of all Moslems within the State or society, including details of age, sex, education, income source, income level, housing, health, jobs and services provided (water, sanitation, solid waste, energy, transport, communication and education). A dynamic-active coordination unit needs to be established within the Department of Social Affairs to deal with the interconnections and links with the Treasury department and the Department of Food Reserves.

(c) *Equilibrium between food supply and demand*

The Council of Consultants, through the three Departments of Food Reserves, Treasury and Social Affairs would maintain the balance or equilibrium between food supply and demand. In addition to the above-listed duties of each house, and in this regard, the Council of Consultants would have responsibility for:

- leasing governmental-owned land (Miri) to the private sector to be cultivated for specific crops during specific times;
- setting governmental incentives for farmers for specific crops, such as giving farmers loans from the Moslem Treasury, or tax reductions on yield and/or equipment/technology bought, etc.;
- initiating, establishing and continuously upgrading State strategic water storage, conveyance, allocation and distribution system for agricultural purposes;
- guiding, advising and coordinating with the Department of Food Reserves which will assure the storage of needed crops with appropriate quantity and quality.

(d) *Food pricing, privatization and subsidies*

Although in an Islamic State pricing of public goods is an individual responsibility, i.e. an issue of private business, Moslems are tied morally to set just and appropriate prices and profits within limits, and any deviation of this is considered a mischief (Qura'n, 26:181; 26:183; 11:84 & 85; 7:84; 6:143; 2:282).

In Islam there should be a balanced relationship between the production costs and selling price of goods and the socio-economic conditions of the people. This balanced relationship of goods management is governed by the statement in the Qura'n of: 'Only be a trade agreed amongst you' (Qura'n, 4:29), which means that an agreement amongst stakeholders (goods producers, owners and sellers, and goods consumers or buyers) needs to be maintained. This balance dictates that no harm to any of the stakeholders should occur. Therefore, Islamic States do not intervene in price setting except when grievance is submitted by any of the stakeholders. As a result, some State subsidies or support, or food distribution to the poor (charity), can be applied in hard times.

It is suggested, for better food resources management, that the proposed Department of Food Reserves in an Islamic State administer and manage all aspects regarding food pricing, privatization and subsidies.

(e) *Individual Moslem responsibility*

When no Islamic State exists, and/or no Islamic regulations (Sharea'a) are in effect, such as is the case in most Moslem countries at present, Moslems are still responsible as individuals to maintain the harmony between Allah's orders and their activities in everyday life. Food security management in this case

would be managed from the base or bottom up, instead of from top down (as when an Islamic State is prevailing).

Among a Moslem's duties is to care about other Moslems, starting from within the close community and moving out to as wide a scale or level as possible. This care does not resolve the issue of food security but could greatly help in alleviating it. It can also help in paving the way for an effective Islamic State once it is established. In this regard, and until an Islamic State is established and functioning, Moslems should only try (individually or in groups) to provide their help and support for the needy in sincere devotion, and not force it (using socio-economic, military, or any other force) because the success of all Moslems' work comes from Allah.

Accordingly, individual and/or groups of Moslems can participate in various areas involving consideration of civil society mechanisms for both regulating behavior and providing welfare. The areas include:

- *Social-Financial Support*: initiating, supporting and/or being actively involved in committees (local non-governmental organizations (NGOs)) for social and financial support, such as the Zakat—regular charity committees which are widespread in Islamic countries, or various types of voluntary charity committees, committees for health care or patients' friends associations, committees to defend human rights, committees for economic support and development, committees for social equity and development, and others.
- *Services Provision*: initiating, supporting and/or being actively involved in committees for service provision such as shelters and free meal provision, houses for the elderly, farmer relief, extension (application support) and/or on advisory committees, neighborhood or village committees, agricultural marketing committees, rehabilitation committees, senior citizen or handicapped committees, various environmental conservation, protection and control groups, public health and safety groups, and others.
- *Professional Groups*: initiating, supporting and/or being actively involved in committees for various syndicates and labor unions, such as lawyers, engineers, MDs and others.
- *Enhancing Awareness or Knowledge*: initiating, supporting and/or being actively involved in committees for public awareness and knowledge, such as various cultural committees, thinker forums, scientist groups, the house of Qura'n and its sciences, and others.
- *Economic Development*: encouraging and supporting private sector involvement and participation in providing economic growth activities and minimizing poverty. Being active in capitalizing and developing all assets in order to create more income and more jobs.

5. Discussion: food security and water policy implications

Allah tells Moslems in the Qura'n that He made from water every living thing (Qura'n, 21:30; 24:44). This means that water availability, use and/or management is a key issue not only for human sustenance and food security but also for all aspects of a human's life. The following sections discuss the interrelationships and interactions, from an Islamic perspective, between food security (production, use, qualitative and quantitative availability, and sustainability) and water policy implications as applied to both Moslems and non-Moslems.

5.1. Main rules and specifications

Allah created people and bequeathed the earth to them with the aim that they cooperate with each other, and settle and civilize it (Qura'n, 11:61; 43:74). This included water resources development

and food production for sustenance. Settling and civilizing the earth according to Allah's orders should only be carried out through righteous activities and/or works (Qura'n, 39:74).

Allah created the earth and made it manageable and enabled it in such a way that all creatures can use it to fulfill their life needs, including food production (Qura'n, 67:14; 14:32; 32:27; 20:43; 2:22). Allah also made man and bequeathed him the earth to manage in a just and balanced way (Qura'n, 34:39; 6:164; 38:26; 2:30; 10:14). Allah created agricultural species in pairs (male and female) to grow agricultural products of various colors (types and tastes) and to produce food (39:21; 32:27; 22:4; 20:43; 31:10; and 34:27).

Water is treated in Islam as a scarce natural resource belonging to the community and, therefore, the Islamic code opposes speculation, protects the rights of both nomadic and sedentary peoples, and attempts to establish an order for agricultural exploitation (Caponera, 1973; Wilkinson, 1978).

Allah sent water in specific, measured, quantities (Qura'n, 23:18; 43:11). In this way, Allah tells people that the water available to them is not unlimited and they need to use it wisely for all purposes. Allah sent water to be equally divided (allocated) for drinking between people (Qura'n, 44:28; 2:60). With regard to this, the Prophet Mohammad (as narrated by Abu Sa'eed al-Khudary) said: 'People are partners in three (essentials): grass (agriculture/food), water (drinking/irrigation) and fire (energy)'.

Allah sent water to be used (amongst other things) for drinking, for irrigation for the production of various greens (grassy/leafy plants), for crops and trees, livestock and for cleaning purposes (Qura'n, 2:22; 2:164; 6:99; 8:11; 14:32; 22:63; 39:21; 30:27; 32:27; 31:10; 40:9). Allah made a direct connection between the extent of water availability for people to the extent of their faith (Qura'n, 72:16; 71:11; 11:42; 6:6).

Allah tells people that cultivating bare land is like bringing a dead object to life (Qura'n, 43:11). In this regard Prophet Mohammad said, 'Whoever revived the dead land (uncultivated bare land), it becomes his land' (narrated by Al-Tirmidhi from Jabir bin Abdullah).

5.2. Administrative aspects

Allah directed people to produce more food products during good rainy seasons and to store excess produced food for drought years (Qura'n, 12:47; 12:48; 7:31). Allah also asked people to eat what they need only, and in moderate quantities without excess, and to maintain balance in food consumption (Qura'n, 20:81; 11:84).

Allah, by creating all living organisms (humans and other creatures) and the earth and the skies, provides people with food against hunger and with security against fear (of danger) (Qura'n, 106:4; 13:17). In this regard, Prophet Mohammad said (about the three pillars of a stable life), 'Who among you today has security in his property, healthy in his body, and has his daily sustenance, as if he has owned the whole world' (narrated by Tirmidhi from Abdullah Ibn Hafs al-Ansari).

5.3. Procedures used

Application of the Islamic code follows the spirit of fair dealing and allows for a wide variety of interpretations adapted to different techniques of water exploitation and systems of water distribution (Caponera, 1973; Wilkinson, 1978).

Islamic water laws prevent water wells from being dug too close to one another (Hayton, 1976). This procedure prevents the lowering of the water table for neighboring users and, in a way, minimizes over-exploitation of aquifers.

Islamic water laws allow the development of modern water resources to interpose on existing traditional systems (Oosterbaan, 1984).

Allah directs people to irrigate land first and then to give water to stock (Qura'n, 28:23; 28:24).

Allah compares the life cycle to the water cycle: it has a start, by precipitation, a growth peak by vegetation, then vegetation becomes dry stubble, and (by the wind) it is scattered and vanishes (Qura'n, 10:24; 13:17; 18:44). Allah drives rain from the skies into the ground, where He can abate it (Qura'n, 23:18), ensuring it moves through the ground, emerging elsewhere as springs (Qura'n, 39:21; 44:13), or causes it to flow in valleys (Qura'n, 13:17), rivers and streams (Qura'n, 14:32; 2:74). He also causes it to fall as snow or hail (Qura'n, 24:43).

5.4. Directions for development and planning

There are five key groups of guidelines or instructions, found in the Qura'n and grouped by the author, that lead Moslems (either as individuals, groups, countries or otherwise) to perform proper planning and development, including those related to water resources and food production to meet their future requirements and needs. These groups appear in the sections below.

- (a) Praise the creator and follow his rules and orders faithfully.
 - Moslems should be thankful and be grateful to Allah for every gift he sent to them, in all their movements and cantonments (areas, settlements), whether in planning or in execution of any work or activity, or the like (Qura'n, 2:52; 2:56; 2:152; 2:172; 2:185; 3:123; 5:6; 5:89; 8:26; 7:48; 14:34; 14:37; 16:14; 22:36; 28:73; 30:46; 35:12; 36:73; 45:12);
 - Moslems should fear Allah and follow his orders/instructions (Qura'n, 2:187; 6:41; 6:69; 20:113; 39:28);
 - Moslems should turn back to Allah in all activities and works (Qura'n, 3:72; 7:168; 12:62; 21:48; 30:41; 46:27; 32:21; 43:28; 43:48);
 - Moslems should learn to act with humbleness and timidity to Allah (Qura'n, 6:42; 7:94);
 - Moslems should believe that their deeds/works will be accounted for at the day of resurrection (Qura'n, 6:14).
- (b) Conducting, examining, observing and monitoring.
 - Moslems should see in-depth and observe things and matters, and collect information leading to better insight and vision (Qura'n, 28:72; 32:27; 43:41; 41:21);
 - Moslems should walk in the right way as Allah instructed them (Qura'n, 2:186);
 - Moslems should bear witness to what is going on and/or monitor it (a type of data collection) (Qura'n, 21:61);
 - Moslems should be restrained and steady: being under control and not hurrying things (Qura'n, 9:12).
- (c) Having knowledge and understanding.
 - Moslems should have prudence and objectivity, and understand and have wisdom (Qura'n, 2:164; 13:4; 29:34; 36:68; 16:12; 16:67);
 - Moslems should seek science and knowledge in their doings to better understand and develop (Qura'n, 2:230; 6:97; 6:104; 7:32; 9:11; 12:46);
 - Moslems should understand jurisprudence issues (Qura'n, 6:64).

(d) Use of in-depth thinking and meditation.

- Allah in the Qura'n asks Moslems to think about matter and issues of concern to their life either at present or in the future, so that perhaps they may reflect (Qura'n, 6:40; 49:21; 7:176);
- Moslems should give heed and receive admonition, and accordingly be guided in their works (Qura'n, 2:221; 7:26; 7:130; 8:47; 14:24; 39:27; 44:48);
- Moslems should have depth and reflection; do they not ponder and/or manage, and earnestly seek to understand (Qura'n, 4:82; 47:24).

(e) Receiving support and advice.

- Moslems can be helped and supported to win and succeed in their works and activities (Qura'n, 36:74);
- Moslems should learn how to guard/secure themselves by having proper skills and tools (Qura'n, 9:122);
- Moslems might receive guidance (being guided) from others (Qura'n, 21:31; 23:49; 32:3).

6. Concluding remarks

Food insecurity is becoming a major worldwide problem. Almost one-fifth of the world's population is Moslem. Consequently, food security management in Islam should be well thought out, institutionalized, checked for implementation, and fully implemented and maintained.

It has been found that the Qura'n contains all the required management particulars, rules and aspects of people's lives and all related activities, as well as all that is needed to understand these particulars and rules to derive the needed management framework suited for them over time and space.

Key Islamic food-related perceptions have been discussed and detailed in this paper including social, food supply, security and institutional/administrative aspects. Islamic rules leading to food security have been outlined, including many particulars relating to food and its proper management. The Islamic management approach as applied to food finds that the status of food (availability and quality) relates to and interconnects with its utilization (in seeking, attaining and distributing sustenance) and, consequently, with its resultant impacts (resource degradation, pollution, mischief, and celebration and joy).

The Islamic view of food security and related water policy implications have been presented including leading codes and actions, needed administrative aspects, procedures used in food and water management, and guiding directions for proper development and planning.

An institutional structure for maintaining the equilibrium between food supply and demand at an affordable price in an Islamic State has been proposed. The proposed structure includes three interconnected departments: the Moslem Treasury, Department of Food Reserves, and Department of Social Affairs. The three departments or funds would be governed by the Moslem Council of Consultants. The Islamic food security approach could be applicable any time and anywhere in the world to individuals, to societies, to countries, or more, as long as the Islamic rules are maintained.

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