Governance and Management Review (GMR)

Vol.3, No. 2, July-Dec 2018

UNDERSTANDING OF ORGANIC FOOD SYSTEM THROUGH ORGANIC FOOD COMPETITIVE MODEL (OFCM)

Hasan Ali Mughal[1]
hasan.uims@gmail.com

Dr. Farida Faisal

ABSTRACT

A dynamic progress of the organic food system as a sustainable agriculture has renowned globally. However, there is little investigation on factors integration in organic food system particularly for its holistic understanding of environmental, economic and social benefits. This paper integrates and synthesizes the findings of published research and it proposes a conceptual model known as Organic Food Competitive Model (OFCM). The OFCM as first of its kind of integrated model with objective to realize and recognize the broader significance of organic food system to academicians, practitioners and policy makers particularly for developing countries like Pakistan. In addition, the OFCM descriptively highlights three interdependent components including consumer motives, supply chain, and government intervention specifically in marketing and public policy perspective. It further discusses the antecedents and horizon of organic food system which include sustainable farming, certification, entrepreneurship, international trade, local market development and impact of organic food on human capital. Finally, the article concludes and offer future research directions on organic food in the domain of marketing and policy.

Key Words: Organic agriculture, sustainable farming, marketing, supply chain, consumer,

[1] Corresponding author, hasan.uims@gmail.com, UIMS, Arid Agriculture University, Murree Road, Rawalpindi, 0300-5533293

government intervention, certification

Introduction

Consumption growth is heralded as the solution to important global problems such as poverty, unemployment and inequality. However, it is also dreaded as a cause of environmental degradation due to dominant and increasing portion of climate gases and other critical emissions which is indeed directly related to non-green and unsustainable consumption (John Thøgersen, de Barcellos, Perin, & Zhou, 2015). Since the second half of the past century the process of agricultural modernization in developed and in many developing countries is patently inconsistent with the principles of sustainability. The food technology and the conventional food have lost its feature of value creation due to numerous food hazards and food safety issues. There is mutually growing concern among academicians, practitioner, policy makers, farmers and consumers that conventional agriculture is contributing to several ecological and social problems (Underwood, McCullum-Gomez, Harmon, & Roberts, 2011).

Nevertheless, the green revolution brought increase in yield for a while; however, it has also increased dependency of farmers on nonrenewable external inputs like fertilizers and pesticides that has been causing loss of indigenous knowledge and practices (Muhammad, Anjum, Kasana, & Randhawa, 2013), stagnant production with increasing cost (Yasin, Ashfaq, Adil, & Bakhsh, 2014), against marginal profits. Further, there is also growing trend of food adulteration and contamination procedures particularly in developing countries like Pakistan. The extent of media reporting, the judiciary's intervention and rejection of exports orders are ample evidences of food safety issues in Pakistan. Meanwhile, Akhtar, Sarker, & Hossain (2012) has also proposed that an extensive food safety infrastructure leading to a safer supply of food need to be devised, designed, and implemented. Indeed, food safety issues deals with wide range of concerns including public health, agriculture methods, food modernization which require constructive intervention by policy makers (Havelaar et al., 2007)

Whereas, on the other hand, the organic agriculture provided an opportunity to combat the post effects of green revolution by boosting the eco-friendly techniques, promoting agro-diversity and using indigenous knowledge; further many farmer's organizations, NGOs and other institutions started working with farmers to transform their farming systems from conventional to organic (Yasin et al., 2014). The last 20 years survey have also revealed that health of farmers and their families, consumers, animals and environmental concerns are vital motivational factors in conversion to organic farming. The stories abound among non- organic growers of rashes, itches, flakey skin, cancer and respiratory ailments, even death – all of which they attribute to agricultural chemicals (Freyer & Bingen, 2015). Moreover, in response to several food scandals which is creating serious threat to human health and societies; the national and international social organization along with government institutions[2] are playing active role in awareness activities of organic food (Ling, 2013). Hence, a major reason for shifted interest and accelerating growth of organic food is a consumer reaction on media reporting about negative effects of chemical fertilizer, pesticides and GMO on environment, health particularly towards

[2] IFOAM, BIOFACH, USDA, Organic Denmark, Organic Trade Board (UK).

food safety issues (Hughner, McDonagh, Prothero, Shultz, & Stanton, 2007). All aforementioned factors have been driving the societies to go back to basics of organic farming; particularly in vital interests of public health, sustainable farming and ecosystem.

Purpose of the article

This article will consider firstly compilation of major aspects of organic farming in one model. Indeed the basic objective of the article is to develop awareness and understanding for academicians, policy executives and other general audience through single comprehensive model which highlights major prospects of organic farming. It is pertinent to mention that although organic farming is focus of attention of scholastic community for the last three decades, however, there has been little debate about integration of dimensions in organic food system to demonstrate in holistic way. Moreover, during discussion with number of academicians, policy executives, practitioners and other stakeholder, they were found with inadequate knowledge and significance of organic food system, which have diverse perspective. Since, the researches in the field of organic food system are generally very focused on particularly issues, for instance, while searching – any stakeholder might find article specifically either in context of environment, society, production methods, economic aspects (low cost, rural development, entrepreneurship, and exports etc) or precisely on marketing aspects (consumer, supply chain, promotion, certification etc) or some researches have been conducted in specific paradigm of organic agriculture policies, practices, programs etc. Thus the available stream of knowledge is missing the integration among sub fields of organic food system. Whereas, in real matter of fact it is not viable for agriculture stakeholders to conduct review of massive literature and extract their desired perspectives to incorporate into their tasks or policies. Therefore, said article is an effort to develop a model with objective to communicate the benefits of organic farming effectively and robustly which may influence the thinking, practices and policies of academicians, practitioners and policymakers. The OFCM is also developed particularly in context of Pakistan where the country has non-availability of organic agriculture experts in all fields i.e. production, marketing and policy. Whereas, there is systematic biasedness against organic agriculture at various level in Pakistan (Poerting, 2016) due to lack of dissemination of information. Hence, our major premise of developing OFCM is to work as effective tool to counter the destructive arguments against organic farming generally and specifically in context of Pakistan.

Organic agriculture and its global trend

The British researcher Albert Howard (1905-1931) began with studies on the philosophy and conceptualization of organic food production in agricultural research centers of India. According to (Wynen, Merrigan, & Sciallaba, 1998), FAO "Organic farming is an environmental friendly ecosystem management in which, use of all kinds of synthetic inputs are eliminated. Hence, organic foods are least processed to maintain the natural nutrition and integrity of food without artificial ingredients and irradiations for preservations purpose". Similarly, the international federation of organic agriculture

movements (IFOAM)[3] defines it as "organic agriculture is a production system that sustains the health of soils, ecosystems and people. It relies on ecological processes, biodiversity and cycles adapted to local conditions, rather than the use of inputs with adverse effects. Organic Agriculture combines tradition, innovation and science to benefit the shared environment and promote fair relationships and a good quality of life for all involved". Further IFOAM also identifies four principles of organic farming including principle of health, ecology, fairness and care. Likewise, there are various other similar definitions by many food authorities i.e USDA,WHO etc. In simple words, organic food is emerging as combination of traditional and innovative food production, processing and preservation methods with contemporary marketing practices (John Thøgersen, 2009).

According to FAO, the organic agriculture is the fastest growing food sector in the world in both land use and market size (Caro & Durán, n.d.) and at the same time it became vital market segment of agri food system (Crandall et al., 2010). The world of organic agriculture, statistics and emerging trends by (Lernoud & Willer, 2017) reports 179 countries with presence of organic practices in 2015 while 87 countries have proper organic regulations. India is dominating in the number of producers for organic agriculture which account for 585,200 producers and there are 2.4 million certified producers in the world. The total organic market is reached to 81.6 billion US dollars wherein US is leading with 39.7 billion US dollar followed by Germany and France which account 9.5 and 6.1 billion US dollar. Denmark has maximum market share of organic food products which is around 8 percent of food sales. International markets are expecting healthy growth of organic food and beverages in coming years. The increasing demand of EU and US along with rising consumer awareness and increase in per capita income of Asian countries shows major potential of organic food for Asia (H Willer, Lernoud, & Kilcher, 2014). Since, promotion of organic food system has more significance for Asian countries as due to its lacking; the countries may face more severe issues and crisis which may include food insecurity, unsafe food supplies, health issues and simultaneously unsustainable rural and agriculture development and environment degradation (Musa, Program, & Gurung, n.d.).

Organic agriculture in Pakistan

The agriculture plays a crucial role in national development of Pakistan, contributing 19.5 percent of the gross domestic product, source of employment for 42.3 percent of the labor force and enhancing food security and poverty reduction of Pakistan. The geographical diversification in Pakistan, provide competitive advantage for cultivation of valued crops, fruits and vegetables throughout the year (Musa et al., n.d.), particularly naturally organic across the various regions (Anjum, Zada, & Tareen, 2016). According survey of by scientist of National Institute of Organic Agriculture (NIOA), Pakistan Agriculture Research Council; the area under organic agriculture in Pakistan is about 1.51 million hectares as compare to nonorganic which is 22.6 million hectare (Musa et al., n.d.)[4] as shown in Fig 1.

Figure 1.

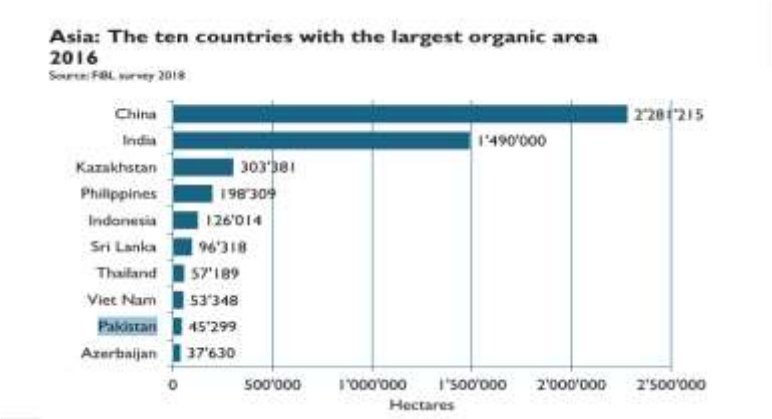
[3] https://www.ifoam.bio/en/organic-landmarks/definition-organic-agriculture

[4] This content/book was provided by Dr. Riaz, author and Ex-Director NIOA during his interview dated 10/5/2016

Source: (Musa et al., n.d.)

However, irrespective of being naturally vast organic land, the drafting of organic food regulations in Pakistan are still in process and there is lacking of any national organic program as well as local certification. While, the arguments in this instance is that in contrast with Pakistan, some regional countries like Bangladesh, Bhutan, Sri Lanka, Maldives and even African states such as Kenya, Tanzania, Uganda, Rawanda have also introduced organic regulations in their countries with proper certification and labelling procedures (Lernoud & Willer, 2017). On the other hand, the internationally certified organic agriculture land in Pakistan is still 45,299 ha in 2016 (see Fig 2) as compare to 22,397 ha in 2012 which is only 0.1 percent of total land with 111 certified producers[5] (Lernoud & Willer, 2017). It is pertinent to mentioned that major portion of certified organic is traded in international markets.

Figure 2. Asian countries with organic area



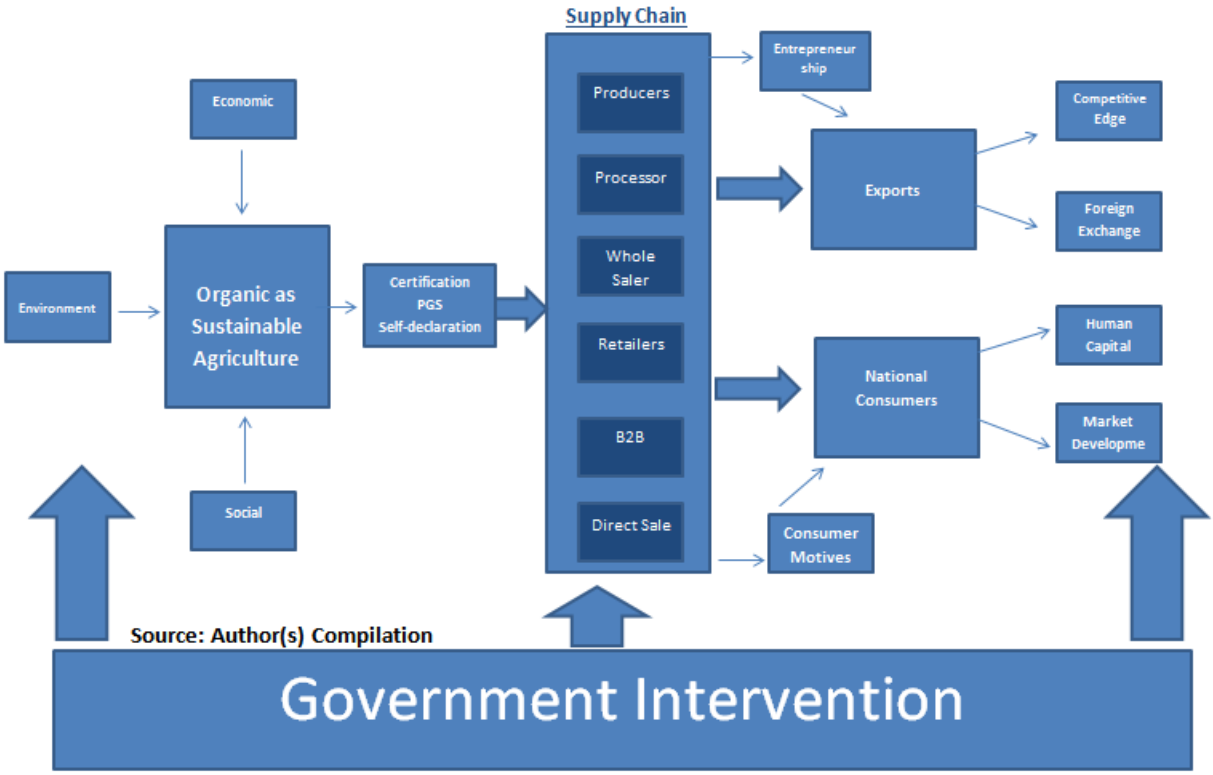
Source: Willer & Lernoud, 2018

It is worth to mention that in context of Pakistan, our main argument is only protection of existing organic production instead conversion of non-organic into organic. As there is no doubt that conventional farming is a vital source of food security while organic method of production still require advancement in technology, training, development and other such facilities to compete with nonorganic

[5] Data is provided by two international certifiers. Please note that not all certifiers provided data on the number of small holders (Willer & Lernoud, 2018)

farming specifically in its yield. However, organic method of production is mandatory due to its diverse benefits as discuss above and later in article. Nevertheless, great opportunity of certified organic farming exist in Pakistan since many regions are near to organic. In next section, the article will discuss the components of organic food competitive model (OFCM) as depict in Fig 3. Moreover, the main premises of OFCM are also presented in series of prepositions (P1-P7):

Figure 3. Organic food competitive model (OFCM)



Source: Author compilation

Organic agriculture contributes towards sustainable agriculture – P1

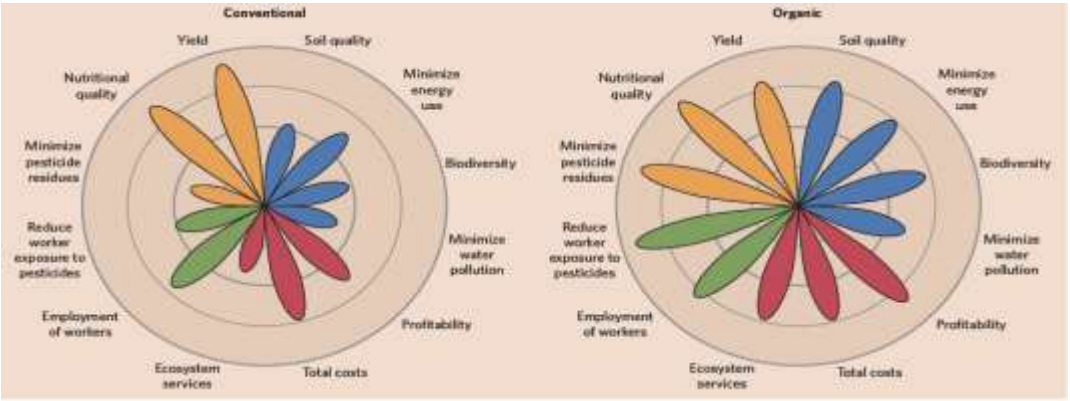
Sustainability is defined as "meeting the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987). The dimensions of sustainability often studied includes environmental, economic and social, which recently have been investigated on cultural aspects (Kottila, 2010). In economic context of sustainability, studies report that organic agriculture performs better on a per hectare scale with respect to both direct energy consumption including fuel and oil; and indirect consumption containing synthetic fertilizers and pesticides with high efficiency of energy use (Khanal, 2009). Similarly, Wright (2012) endorsed the study conducted by Department for Environment, Food and Rural Affairs (UK) that organic producers use 25 percent less energy than

nonorganic crops, though, in some crops it decrease up to 60 percent. Likewise, Hammad et al., (2011) have also conducted study on organic farming of wheat crop in Pakistan and concluded that "Inorganic farming gave high net benefit however it gave less marginal rate of return than organic farming due to high cost of input".

Badgley et al., (2007) in comparing global data set with 293 examples of various food segments asserts that "organic methods of food production can contribute substantially on global per capita basis to feed the current and future human population on the current agriculture land base" (p. 94). Though, organic agriculture could have vital role in global food and ecosystem security, however, none of the agri system alone can safely feed the planet.

Due to growing population and limited economic growth in many agriculture countries, the unemployment is rising in many regions, the average increase in labor use per ha of organic farms is about 20%, consequently, organic farming potentially create new jobs in rural areas (Nieberg & Offermann, 2000). At the same time, organic farming can also contribute towards rural development which ultimately contributes in economic growth (Marasteanu & Jaenicke, 2016) mainly through local and international market development against premium prices. Hence, a composite and promising relationship links organic farming to sustainable rural development (Pugliese, 2001).

Fig 4. Sustainability of Organic Farming



Source: Reganold & Wachter, 2016

Reganold & Wachter, (2016) also found organic agriculture in better balance in four areas of sustainability i.e production, environment, economic and wellbeing as shown in fig 4. For instance, it can be observed that organic is much better in length of blue petals which represents better performance in environmental dimension; red petals represent economic performance which is also competing comfortably with conventional farming; likewise, organic is performing relatively better in dimensions of wellbeing in green petals. Orange petals represent area of production where organic is much better in low use of pesticides and fertilizers which also ultimately reduced the cost and dependency on external outputs while researches shows that in nutrition level of organic is slightly better as compare to

its counterpart however the difference in nutrient value is diverse among different species. Yield of organic is one of the most discussed aspects while comparing with non-organic as shown, there is notable difference among both methods. However, in longer run with respect to other dimensions of sustainability, organic farming can compete the production difference in longer run due to its biodiversity, soil fertility, ecolonomy and other such characteristics. Moreover, in organic food rich countries like Denmark etc, the organic farming is operating on large scale which enable resource efficiency unlike smaller farms and hence organic principles are equally implementable in large scale operations; and this is the reason it is consider as viable alternative to non-organic farming (Thorsøe, 2015).

As far as role of organic is concerned in food security, Morshedi, Lashgarara, Hosseini, & Najafabadi (2017) conclude that traditional knowledge of farmers and communities in the social dimension particularly in cultural and environmental context is very important in improving food security. Likewise, Sitthisuntikul, Yossuck, & Limnirankul (2018) also revealed that organic agriculture as a method of sufficient economic supports is strengthening household food security and livelihood issues in small scale farming. Further, recent reports recognize organic agriculture as an advanced farming method that incorporate multiple sustainability goals which have vital roles in global food and ecosystem security, thus organic agriculture system can contribute significantly with more share in feeding the world (Reganold & Wachter, 2016).

Organic food certification and labelling contributes towards value creation – P2

The development and growth of new markets segments requires prescribe standards and principles through trustworthy authorities in the form of various certifications, which indeed plays a vital role in the recognition of specific products (B. H. Lee, 2009). Organic certification logos on product labelling act as identification tool for consumers that products are passed through specific methods and standards of production (Janssen & Hamm, 2012). According to IFOAM, the organic methods address several standards of organic production including requirements like general production methods and farm conversion periods, crop production and wild products, animal production (including bee-keeping), processing and handing, social justices and handling[6]. There are several international certification bodies accredited under various programs i.e. IFOAM[7], USDA[8], EU organic[9] etc are operating globally. However, there prevails always a misconception about organic production that organic food must be 100 percent made with organic ingredients – which is not true. According to USDA there are three kind of organic claims i.e. "100 percent organic" which must contain 100% organically produced ingredients; "organic" which contain at least 95% organic ingredients and "made with organic" with at least 70% organic ingredients, all those excluding added water and salt. Fig 3 shows some established organic food labelled globally and regionally.

[6] https://www.ifoam.bio/en/general-information-organic-standards-and-certification
[7] https://www.ifoam.bio/en/ifoam-accredited-certification-bodies
[8] https://www.ams.usda.gov/services/organic-certification/certifying-agents
[9] https://ec.europa.eu/agriculture/organic/eu-policy/eu-rules-on-trade/control-bodies_en

Fig.4 Organic food labels

USA EU Denmark Germany KSA India Australia

Source: Author compilation

Many organic agencies also maintain organic integrity database with organic certifier locator to ensure verification of growers, processors and retailers in order to reduce marketing deceptive practices. In addition to third party certification, there is also low-cost, locally-based system of organic food quality assurance which is known as Participatory Guarantee System (PGS)[10]. Moreover, the third method of organic food sales is very common among small farmers called "self-declaration method" which is traditional, wherein small growers save their certification cost and claim about the products to be organic and sold on mutual trust among growers and consumers.

Supply chain management plays vital role in organic agriculture system – P3

Agri-food supply chains have undergone important structural changes since 1990s which have altered the ways food firms do business (Marques Vieira, Dutra De Barcellos, Hoppe, & Bitencourt da Silva, 2013). It is most emerging field in agriculture, where all the farmers either small or large, rich or poor have equal opportunities to contribute through modern marketing channels in ordered to gain high profit margins. The earlier scope of studies in on organic food supply chain in developed countries were to address the issues like operating cost, inefficient collaboration among supply chain actors, equilibrium position of supply and demand, reliability and trustworthiness of suppliers, lack of information flow (Kottila, Maijala, Engineering, & Managemen, 2005). The preliminary indication of initial stages in organic food market development is emergence of short supply chains and regional organic shops which evolve into mainstream outlets through integration and involvement of several emerging retailers (Aertsens, Mondelaers, & Huylenbroeck, 2009; Padel, Midmore, Padel, & Midmore, 2006). Now, organic food is vital market segment of agri food system in many countries with interrelated and interconnected global ventures of food producers, processors, distributors and retailers (Crandall et al., 2010). The difference in value system and motivational factors of organic food's chain members is indeed an important factor towards its performance. Such factors include trust in profit distribution, pricing, in time delivery promises and quality of products. The growth process of organic food segment involve the acceptance of organic products by various supply chain members along with their competitive functioning, products availability and diversification for national and international trade on reduced distribution cost (Eisenbach & Eisenbach, 2011) Mishev, Stoyanova, Mishev, & Stoyanova (2009) also concludes that one of the reasons for underdeveloped market is unstructured

[10] https://www.ifoam.bio/en/pgs-basics

supply chain of organic food products. He further suggests that some of the measures for improving the production, supply chain and markets of organic food could be strong horizontal and vertical integration, awareness and promotional activities, government support for producers of organic farming and promoting organic consumptions in public sector. In the case studies conducted by FAO, (2013) on organic supply chains of various products for small farmer income generation in developing countriesincluding India, Thailand,Brazil, Hungary and Africa, revealed that success factors which influence the supply chain of organic farming includes market access, participation of private sector partners, suitable support services, task specialization, improved product quality and safety, organized farmers, backing and adequate financing. Whilst, failure factors are inadequate technological development, undeveloped domestic markets, multiple certifications, high financial costs, limited management capabilities. The report discuss these factors in details and further conclude that "organic supply chains are successfully operating in developing countries for export markets and, to a lesser extent, in domestic markets for the benefit of small-scale farmers" (p. 45). Nevertheless, food value chain networks should focus on promoting organic food products both through traditional retailers and through special organic distribution channels and they should incorporate the implications about effective marketing practices (J. Thøgersen, 2009).

The role of entrepreneurship and exports opportunities in organic food system –P4

Entrepreneurs and entrepreneurship is focus of attention by researchers and policy makers specially in pursuit of local and regional development (Larsson, 2012). Organic food industry as worlds one of the fastest growing food category by an average of thirty percent annually – provides opportunities for SMEs to innovate their products and target identified segments with a view to enhancing their overall market share (Lobo, Mascitelli, & Chen, 2014). Thus, organic food segment is an attractive opportunity for new startups and prospective entrepreneurs with attractive margins which can also contribute in resolving unemployment issues. Particularly, it is "blue sea" for knowledgeable entrepreneur and SMEs to contribute towards national economy and sustainable development (Larsson, 2012). Further, due to intense competition, producers and processors of conventional food products are emphasizing on value creation and differentiation strategies, so, collaborating and/or venturing with organic food producers and suppliers can initiate new avenue of diversify organic product line under same brand. However, there is need to adapt proactive approach and institutionalized the research and development practices for prospective entrepreneurs in ordered to strengthen this trend (Freyer & Bingen, 2015). The green entrepreneurial approach should include innovation and branding given that, on its own, sustainability may offer little competitive advantage. This can lead to innovation inertia among entrepreneurs with respect to green entrepreneurship (J. Willemsen & van der Veen, 2014). Well established and supported regional entrepreneurship also increased the competitiveness of exports in global economy (Porter, 1998). It is well recognized fact that development of organic food industry is a source of foreign exchange in the form of exports for favorable trade deficit and balance of payment (Edwardson & Santacoloma, n.d.; Kleemann, Abdulai, & Buss, 2014). Partap, (2010) and Helga Willer & Lernoud, (2018) also reports that in Asian countries, organic food is produced mainly for export

purpose and these countries should further promote organic food export as an opportunity. Helga Willer & Lernoud (2018) claims that organic export of India is estimated to triple by 2020 with similar trend in domestic market while similarly increasing export of Bangladesh is an ample evidence. Hence, organic food segment can contribute significantly in the development of economy and its several components. Whereas, in case of Pakistan, its time to increase the production as well as export of organic food products so to capture international markets through competitive advantage. At the same time it can be good source of foreign exchange to meet the worsening balance of trade issues.

Consumers understanding is essential for development of organic food system – P5

Food consumption patterns have been constantly changing with changing in social values, technological advancement and consumer life style. Consumer interests in organic has been growing with larger potential in many industrialized countries since past decades. A dynamic growth in the organic food market has enforced marketing researchers to explore the insight of consumers and market dimensions. Extent literature provides valuable insight into organic food consumers that illustrates the profile of these consumers which is in domain of market segmentation belonging to strategic marketing (Kotler, 2007). From a marketing perspective, it is vital to identify, understand and forecast the factors that affect consumer behavior in respect of organic food (K. H. Lee, Bonn, & Cho, 2015). However, consumer interpretation of term organic is diverse within various contexts while the purchase decision of organic food is based on subjective experiences and perception (Hughner et al., 2007). Hamzaoui Essoussi and Zahaf (2008a,2009) havealso concluded that there is diverse awareness level and understanding about the concepts of organic and organic certification among consumers of various regions (Hemmerling, Hamm, & Spiller, 2015). Consumers' awareness, knowledge and information about organic food can play an key role in understanding their preferences towards organic food. Meanwhile, the unique national context (e.g. differences in national food cultures, in organic agriculture's share of total agriculture ,and in the maturity of the organic market(, usually depicts distinctive scenario of each native market with respect to consumer preferences and choices of organic food products (J. Thøgersen, 2009). Hence, in accordance with native context organic food is generally labelled with healthy, natural, organic, sustainable, ethical, authentic, tasty, and humanitarian sort of similar words, which provide recurrent persuasive marketing discourse for consumers interested in natural products (Freyer & Bingen, 2015). The consumers' willingness of purchasing green products is often relates to their ecological concern (Amyx, DeJong, Lin, Chakraborty, & Wiener, 1994) and have positive relation between OF consumption and universalism (Aertsens, Verbeke, Mondelaers, & Van Huylenbroeck, 2009). Besides, the reasons behind consumer motivation to purchase organic products vary among better nutrition, reduced health risks, social aspects, and support of local farming, fair market, and environmental awareness (Dalcin, R. Leal de Souza, B. de Freitas, D. Padula, & Dewes, 2014). Diverse motives are noted in literature for purchase and consumption of such as health, environment, and animal social welfare concerns (Bezawada & Pauwels, 2013). A meta study by Hemmerling et al., (2015) have analyzed that in forty quan and qual studies, the consumers' perceptions, beliefs, associations and expectations from organic products, most commonly relates to health and/or

environment protecting aspects; Seventeen studies report its consumption due tononexistence or with fewer chemicals and pesticides; 18 studies have revealed consumer association due to good or better taste; further, in seven publications, respondents prefer organic food for the reason of good or better quality .Moreover ,quite frequently consumers perceive organic products as natural ,pure or authentic and as more nutritious, the non-usage of artificial additives. In compilation of research findings in robust review that why people purchase organic food, Hughner et al., (2007) identifies several themes including health and nutritional concern, superior taste, concern for the environment, food safety, lack of confidence in the conventional food industry, concern over animal welfare, support of local economy, more wholesome, nostalgia and fashionable/curiosity. Similarly, organic food buyers are health conscious, less price sensitive and therefore believe in quality (Padiya & Vala, 2012) while comparing benefits as comparing to cost. Farmers, processors, exporters and retailer are emphasizing on quality and food safety issues through emerging schemes so that consumer confidence can be retain and regain at national and international level (Hamzaoui-Essoussi, Sirieix, & Zahaf, 2013). Likewise, in ordered to gain consumer attention, there is immense need to build trust factor; such as trust in government, retailers, manufacturers, farmers (Ding, Veeman, & Adamowicz, 2012) and trust in consumer organizations.

Ploughing through plethora of literature, certain obstacles and notable deterrents are also found in purchase process of organic food. Aschemann-Witzel & Zielke, (2017) asserts the notion that with respect to consumer policy perspective, the price as a barrier in purchasing of organic food requires appropriate action and proactive approach towards sustainable consumption. Several studies have also reported the impact of organic food availability on consumer decision process and reported it as significant barrier which encourage the purchase of organic food (Paul & Rana, 2012). There are also many other barriers reported in literature such as inadequate merchandising, distrust on organic certification boards and labels, ineffective marketing, dissatisfaction on food traceability and lack of sensory appeals (Hughner et al., 2007). Hence, we can assert the notion that understanding of consumer behavior is prerequisite for growth and development of organic food industry.

Organic agriculture can plays vital role towards Human capital – P6

The contemporary issues of population growth, technological transformation and globalization required skilled and knowledge based economy to meet the international competitiveness. Human capital is inherently historical concept that is combination of productive skills knowledge, abilities and expertise of the labor forces where nutritious, safe and pollution free food plays vital role through cognitive minds. The investment in people (e.g., education, training, health) increase individual's productivity and so as competitiveness, working capacity which consequently increases income (Diebolt & Haupert, 2015) and economic growth of the nations. Whereas, Pollitt & Mathews (1998) found that "under-nutrition results in decreased activity levels, decreased social interactions, decreased curiosity, and decreased cognitive functioning." Similarly, Averett & Stifel (2007) have also concluded that childhood malnutrition has a negative effect on cognitive abilities. Polluted food also causes permanent impairment

of cognitive abilities of infants born to micronutrient-deficient mothers. Further, micro nutrient malnutrition (`Hidden Hunger') has been afflicting at least two billion people globally that is causing serious health issues, low worker capacity, high rates of mortality and also increasing rate of chronic diseases (coronary heart disease, cancer, stroke, and diabetes). Organic food is consider as source of nutrition food particularly for far away areas like Tharparker (Pakistan) where conventional farming si not much viable and children usually have malnutrition issues. Unfortunately 1,340 children had died since 2014 including 341 underweight children and 36 from malnutrition[11]. According to FOA in Pakistan, the nutritional status of children under five years of age is extremely poor while it is in the category of very high undernutrition (>40%) countries according to UNICEF data[12]. Thus, one can argue that non availability of food or unsafe food can equally affect the standard of life. However, the postulate that organic food as a much healthier, beneficial and save food has already been established in the light of literature. Therefore, the organic food could be the most reliable preference to increase the productivity of human resource with more nutritious and health benefit and it directly affect the general public and labor forces of the country (Nieberg & Offermann, 2000) especially in pursuit of prosperity, economic growth and sustainable development. However, it is worth to mention that our instance is to highlight the issues about availability and security of organic food. Organic food should be in appropriate proportion of diet particularly for necessary segment of population e.g. children, feeding mothers, patients etc. Thus, it is prime responsibilities of governments and corporations to protect and develop their population through safe, nutrient and qu foodality. Nevertheless, humanity is at risk from a series of dangers of our own making of global warming and genetically-engineered viruses(Hawking, 2016).

Government Intervention is prerequisite for organic food system – P7

It is well established fact that markets and government act as two broad systems for distribution of commodities and service which enable the economies to develop, operate and prospered in order to match supply and demand effectively and proactively by and through policy regulations (Stewart, 2015). Public policy plays crucial in the promotion of sustainable development. It generates signals and develop the regulatory and institutional frameworks for reformatory, promotional and participatory roles that stimulate the actions of all actors (Lobo et al., 2014; Qureshi, Fellow, & Economy, n.d.). In case of organic agriculture, it also requires the support of public sector in term of policy reforms and investment because organic agriculture is beneficial for society as whole (Scialabba, 2000). Primarily, government policies stimulate farmers in converging to organic agriculture and to develop organic markets. Historically observed, the farmer's incomes are found to be lower than other labor forces of the economy while to reduce such disparity governments usually intervene to keep farmers motivated towards agriculture. Further, in contrast with significance of organic agriculture, governments generally carried out intensive measures within framework of national organic programs in various countries.

[11] https://tribune.com.pk/story/1413231/1340-children-died-thar-since-2014-court-told/
[12] https://data.unicef.org/topic/nutrition/malnutrition/

These programs or action plans usually include introducing national policies for organic agriculture, training of organic farmers in production as well as in marketing aspects, improving quality of R&D, initiating and encouraging organic certification programs, enhancing product quality, packaging, logistic infrastructure and technical support (Braber, 2006). Government institutions are also responsible to ensure database management on account of organic land, necessary inputs, farmers, products, supply chain members, trade related leads, consumer trends and dissemination of other related information. In addition to the common agricultural policy, the organic production can also be promoted systematically through specific informational campaigns (Zagata, 2012). Hence, government intervention is prerequisite to ensure favorable conditions for enterprises and consumers (Lockie, 2009) without any ambiguity and uncertainty in policies, standards and certification / labeling of organic food (Freyer & Bingen, 2015).

Aertsens, Verbeke, et al., (2009) indicates that availability through supply chain activities of organic food in EU countries is indeed driven by government support which has stimulated the consumption of organic products with more competitive prices. There is also dire need of government support in respect of economic assistance for transition or research, boosting the entry of new organic farmers and conversion by conventional farmers (Thilmany, 2006) However, in case of non-development of local organic industry, the demand of organic food could have negative impact on trade deficit due to increase in organic imports.

Indeed, in pursuit of sustainable agriculture and food system governments usually focused on providing subsidies on organic agriculture including third-party control system, certification and label sanctioning, disseminating information and public service awareness campaigns, also procuring organic food for public sector consumption as green procurement policy and organic in public plate; however, among these valuable intervention the most significant role is pricing support policies as well as trust measures in organic food system (J. Thøgersen, 2009).

The scientific literature on organic agriculture in less developed countries contain only a small fraction of total research (Reganold & Wachter, 2016). There could be numerous practices for promotion of organic farming including (a) promotion and trainings to make sure its availability and food safety issues within healthy environment. (b) Reducing certification cost to motivate farmers in order to increase its farming area. (c) to develop organic tourist farm to enhance consumer trust on production methods and tractability in order to develop their attitude and purchase intentions; such practices can increase farmer's income that can attract more young farmers which may contribute towards rural development (Hsu, Chang, & Lin, 2016; Sangakkara & Katupitiya, n.d.). Similarly, in contrast with developed economies, there is also general consensus among scholastic community (Bhattarai et al., 2013; Edwardson & Santacoloma, n.d.; Tiraieyari, Hamzah, & Samah, 2017) that government intervention for promotion of organic agriculture is essential. Likewise, many scholars (Asif, Xuhui, Nasiri, & Ayyub, 2017; Memon, 2013; Samie, Ahmed, & Kouser, 2010; Ullah et al., 2015) in context of Pakistan has also emphasized the policy intervention. However, there is still need to disseminate complete information to policy makers which may transform their beliefs in favor of organic farming.

Discussion

This paper has introduced a new model known as OFCM for awareness, understanding and evaluation of organic food system. The model can also be used to identify mechanism, parameters and standards in order to investigate, plan and implement organic food system. Whereas, the OFCM as a theory describe the relationship of various components of models within set of assumptions and constraints which have similar direction towards single aim. Therefore, the purpose of OFCM is twofold: to organize (parsimoniously) and to communicate clearly (Bacharach, 2011). As it is evident from above arguments and provided justifications that organic food system is need of the time since no production system alone can feed the world. It is alternative method of farming in sustainable way. Further the execution of OFCM is possible in accordance with concept of sustainable marketing by "creating, communicating, and delivering value to customers in such a way that both natural and human capital are preserved or enhanced throughout" (Martin & Schouten, 2014) (p.18). Hence, we can claim that OFCM also contributes towards sustainable marketing theories particularly in domain of agriculture.

Nevertheless, green revolution increased the agriculture production manifold. However, agrowing and diverse group of scholars have consensus that it is not sustainable specifically in the light of increasing food scandals, diseases and other such crisis. As a result the trust of growers, enterprises, consumers and policy makers has been traumatized. These food safety and environment friendly concerns are obligating food producers and small and medium enterprises (SMEs) to introduce innovation in their products that have affected their business practices (Avermaete, Viaene, Morgan, & Crawford, 2003).

As a result of emerging demand and retailers interest, the focus of attention switched to effective supply chain which indeed requires proper planning and vertical coordination among supply chain members. Further, due to increasing demand, it was not viable for retailers and local manufacturer in developed countries to maintain the constant supplies particularly due to lack of organic areas and certain variations in production mainly due to seasonal products and climate suitability. Hence, opportunity of exports was created for under developing countries. The case of Pakistan is relatively different – since unjustly no organic food regulations could be formed and implemented, hence, local market is still operating as nonregulated markets. In case of organic food exports, the companies have opted international certification which is relatively higher in cost but accepted in European and American markets. Though, the increase in certified land of organic farming is doubled in last few years, yet, it is far less in contrast with India and other regional countries as shown in fig (--). The present growth of certified farming and emergence of local organic food markets depicts the potential and viability of organic farming in Pakistan which is indeed achieved without any government intervention due to lack of attention and misconception. Therefore, the proposed model can be effective tool for policy makers, corporate sector and other stakeholders for their understanding and awareness about organic food system especially in longer interest of environment, economy and society.

Conclusion

It is need of the time to realize the significance of organic farming by establishing a clear picture about potential of organic farming. Ploughing through plethora of literature indicates that organic farming can play vital role in developing countries like Pakistan as (i) to facilitate small farmers and non-cultivated lands in cost effective and sustainable way (ii) to develop national organic food market

for safe and nutrient food to protect health of generally public and labor forces (iii) to boost international trade of organic food products towards employment generation and economic growth. Moreover, the awareness and availability of organic food through government intervention can even reduce food inflation as competition among food various segments and products can eliminate monopoly and cartelization of large MNCs by creating additional offer. It outlines potential inferences for business and marketing scholars as aggressive marketing by conventional food MNCs and weak marketing by organic players is greater future challenge to preserve sustainability. However, it is important to recognize that our scholarly community particularly in developing countries like Pakistan needs to empirically investigate several discussed dimensions with a number of applied questions[13]. Nevertheless, globally, we are at a critical turning point with respect to climate changes, sustainability and value creation for consumers. Therefore, management scholars have an incredible opportunity to contribute with novel ideas that informed and direct policy makers, practitioners, businesses and consumers for rational decision making in this regards.

References

[1] Aertsens, J., Mondelaers, K., & Huylenbroeck, G. Van. (2009). Differences in retail strategies on the emerging organic market Differences in retail strategies on the emerging organic market. https://doi.org/10.1108/00070700910931968

[2] Aertsens, J., Verbeke, W., Mondelaers, K., & Van Huylenbroeck, G. (2009). *Personal determinants of organic food consumption: a review*. *British Food Journal* (Vol. 111). https://doi.org/10.1108/00070700910992961

[3] Akhtar, S., Sarker, M. R., & Hossain, A. (2012). Microbiological food safety : a dilemma of developing societies, (October), 1–13. https://doi.org/10.3109/1040841X.2012.742036

[4] Amyx, D. A., DeJong, P. F., Lin, X., Chakraborty, G., & Wiener, J. L. (1994). Influencers of purchase intentions for ecologically safe products: an exploratory study. In *AMA winter educators' conference proceedings* (Vol. 5, pp. 341–347). American Marketing Association Chicago, IL.

[5] Anjum, A. S., Zada, R., & Tareen, W. H. (2016). Organic farming : Hope for the sustainable livelihoods of future generations in Pakistan, *1*, 20–29.

[6] Aschemann-Witzel, J., & Zielke, S. (2017). Can't Buy Me Green? A Review of Consumer Perceptions of and Behavior Toward the Price of Organic Food. *Journal of Consumer Affairs*, *51*(1), 211–251. https://doi.org/10.1111/joca.12092

[13] Author has also conducted empirical research in consumer, supply chain and policy perspective in context of Pakistan as his PhD investigation. Said research articles are in progress. It is pertinent to mention that present paper is conceptual model for general understanding, awareness of stakeholders.

[7] Asif, M., Xuhui, W., Nasiri, A., & Ayyub, S. (2017). Determinant Factors Influencing Organic Food Purchase Intention and the Moderating Role of Awareness: A Comparative Analysis. *FoodQuality and Preference*, *63*(September 2017), 144–150. https://doi.org/10.1016/j.foodqual.2017.08.006

[8] Averett, S. L., & Stifel, D. C. (2007). Food for thought: The cognitive effects of childhood malnutrition in the United States. *Unpublished Working Paper*.

[9] Avermaete, T., Viaene, J., Morgan, E. J., & Crawford, N. (2003). Determinants of innovation in small food firms. *European Journal of Innovation Management*, *6*(1), 8–17.

[10] Bacharach, B. (2011). Organizational Theories : Criteria Some for Evaluation What Theory Is Not : Data , Typologies , and Metaphors, *14*(4), 496–515.

[11] Badgley, C., Moghtader, J., Quintero, E., Zakem, E., Chappell, M. J., Aviles-Vazquez, K., … Perfecto, I. (2007). Organic agriculture and the global food supply. *Renewable Agriculture and Food Systems*, *22*(2), 86–108.

[12] Bezawada, R., & Pauwels, K. (2013). What Is Special About Marketing Organic Products? How Organic Assortment, Price, and Promotions Drive Retailer Performance. *Journal of Marketing*, *77*(1), 31–51. https://doi.org/10.1509/jm.10.0229

[13] Bhattarai, S., Lyne, M. C., Martin, S. K., Bhattarai, S., Lyne, M. C., & Martin, S. K. (2013). Assessing the performance of a supply chain for organic vegetables from a smallholder perspective. https://doi.org/10.1108/JADEE-12-2012-0031

[14] Braber, K. (2006). Developing local marketing initiatives for organic products in Asia. *A Guide for Small and Medium Enterprises, ADDA, IFOAM, Hanoi*.

[15] Caro, B., & Durán, M. (n.d.). *Organic agriculture and the law*.

[16] Crandall, P. G., Friedly, E. C., Patton, M., O'Bryan, C. A., Gurubaramurugeshan, A., Seideman, S. A., … Rainey, R. (2010). Estimating the demand for organic foods by consumers at farmers' markets in Northwest Arkansas. *Journal of Agricultural and Food Information*, *11*(3), 185–208. https://doi.org/10.1080/10496505.2010.491999

[17] Dalcin, D., R. Leal de Souza, A. ngela, B. de Freitas, J., D. Padula, Â., & Dewes, H. (2014). Organic products in Brazil: from an ideological orientation to a market choice. *British Food Journal*, *116*(12), 1998–2015.

[18] Diebolt, C., & Haupert, M. (2015). Clio's Contributions to Economics and History. *Revue d'economie Politique*, *126*, 971–989.

[19] Ding, Y., Veeman, M. M., & Adamowicz, W. L. (2012). The impact of generalized trust and trust in the food system on choices of a functional GM food. *Agribusiness*, *28*(1), 54–66.

[20] Edwardson, W., & Santacoloma, P. (n.d.). *Organic supply chains for small farmer income generation in developing countries – Case studies in India, Thailand, Brazil, Hungary and Africa.*

[21] Eisenbach, J., & Eisenbach, J. (2011). Distribution channels for Greek organic food in the domestic and international. https://doi.org/10.1108/00070700210425679

[22] Freyer, B., & Bingen, R. J. (2015). *Re-thinking organic food and farming in a changing world*. Springer.

[23] Hammad, H. M., Ahmad, A., Laghari, K. Q., Abbas, F., Nasim, W., Farhad, W., & Malik, A. H. (2011). Organic Farming in Wheat Crop Under Arid Condition Of Pakistan, *48*(2), 97–101.

[24] Hamzaoui-Essoussi, L., Sirieix, L., & Zahaf, M. (2013). Trust orientations in the organic food distribution channels: A comparative study of the Canadian and French markets. *Journal of Retailing and Consumer Services*, *20*(3), 292–301. https://doi.org/10.1016/j.jretconser.2013.02.002

[25] Havelaar, A. H., Bräunig, J., Christiansen, K., Cornu, M., Hald, T., Mangen, M., … Van Pelt, W. (2007). Towards an integrated approach in supporting microbiological food safety decisions. *Zoonoses and Public Health*, *54*(3-4), 103–117.

[26] Hawking, S. (2016). This is the most dangerous time for our planet. *The Guardian*, *1*.

[27] Hemmerling, S., Hamm, U., & Spiller, A. (2015). Consumption behaviour regarding organic food from a marketing perspective—a literature review. *Organic Agriculture*, *5*(4), 277–313. https://doi.org/10.1007/s13165-015-0109-3

[28] Hsu, S.-Y., Chang, C.-C., & Lin, T. T. (2016). An analysis of purchase intentions toward organic food on health consciousness and food safety with/under structural equation modeling. *British Food Journal*, *118*(1), 200–216. https://doi.org/10.1108/BFJ-11-2014-0376

[29] Hughner, R. S., McDonagh, P., Prothero, A., Shultz, C. J., & Stanton, J. (2007). Who are organic food consumers? A compilation and review of why people purchase organic food. *Journal of Consumer Behaviour*, *6*(2–3), 94–110. https://doi.org/10.1002/cb.210

[30] J. Willemsen, S., & van der Veen, G. (2014). Organizing local "green" entrepreneurship: a brand perspective. *Journal of Place Management and Development*, *7*(3), 235–246.

[31] Janssen, M., & Hamm, U. (2012). The mandatory EU logo for organic food: Consumer perceptions. *British Food Journal*, *114*(3), 335–352.

[32] Khanal, R. C. (2009). Climate change and organic agriculture. *Journal of Agriculture and Environment*, *10*, 116–127.

[33] Kleemann, L., Abdulai, A., & Buss, M. (2014). Certification and Access to Export Markets : Adoption and Return on Investment of Organic-Certified Pineapple Farming in Ghana. *WORLD DEVELOPMENT*, *64*, 79–92. https://doi.org/10.1016/j.worlddev.2014.05.005

[34] Kotler, P. (2007). *Marketing in the public sector*. Pearson Education India.

[35] Kottila, M. (2010). *Understanding the organic chain*.

[36] Kottila, M., Maijala, A., Engineering, I., & Managemen, Q. (2005). Archived at http://orgprints.org/4402/ the organic food supply chain in relation to information management and the interaction, 2003–2006.

[37] Larsson, M. (2012). Environmental Entrepreneurship in Organic Agriculture in Järna, Sweden. *Journal of Sustainable Agriculture*, *36*(2), 153–179. https://doi.org/10.1080/10440046.2011.620225

[38] Lee, B. H. (2009). The infrastructure of collective action and policy content diffusion in the organic food industry. *Academy of Management Journal*, *52*(6), 1247–1269.

[39] Lee, K. H., Bonn, M. A., & Cho, M. (2015). Consumer motives for purchasing organic coffee: The moderating effects of ethical concern and price sensitivity. *International Journal of Contemporary Hospitality Management*, *27*(6), 1157–1180.

[40] Lernoud, J., & Willer, H. (2017). *The World of Organic Agriculture 2017: Summary*. *The World of organic agriculture. Statistics and Emerging Trends*. https://doi.org/10.4324/9781849775991

[41] Ling, C. Y. (2013). Consumers' purchase intention of green products: an investigation of the drivers and moderating variable. *Elixir Marketing Mgmt. 5*, *57*(A), 14503–14509. Retrieved from http://www.elixirpublishers.com/articles/1367043926_57A (2013) 14503-14509.pdf

[42] Lobo, A., Mascitelli, B., & Chen, J. (2014). Opportunities for small and medium enterprises in the innovation and marketing of organic food: Investigating consumers' purchase behaviour of organic food products in Victoria, Australia. *AI and Society*, *29*(3), 311–322. https://doi.org/10.1007/s00146-013-0457-z

[43] Lockie, S. (2009). Responsibility and agency within alternative food networks: assembling the "citizen consumer." *Agriculture and Human Values*, *26*(3), 193–201.

[44] Marasteanu, I. J., & Jaenicke, E. C. (2016). Hot Spots and Spatial Autocorrelation in Certi fi ed Organic Operations in the United States, *3*(December), 485–521.

[45] Marques Vieira, L., Dutra De Barcellos, M., Hoppe, A., & Bitencourt da Silva, S. (2013). An analysis of value in an organic food supply chain. *British Food Journal*, *115*(10), 1454–1472. https://doi.org/10.1108/BFJ-06-2011-0160

[46] Martin, D. M., & Schouten, J. W. (2014). Sustainable marketing through the natural step. In *Humanistic Marketing* (pp. 231–243). Springer.

[47] Memon, A. (2013). Pakistan has favourable climate for production of organic dates Quantity : Tonnes.

[48] Mishev, P. D., Stoyanova, Z. D., Mishev, P. D., & Stoyanova, Z. D. (2009). Supply Chain of Organic Products in Bulgaria Supply Chain of Organic Products in Bulgaria, 1–12.

[49] Morshedi, L., Lashgarara, F., Hosseini, S. J. F., & Najafabadi, M. O. (2017). The role of organic farming for improving food security from the perspective of fars farmers. *Sustainability (Switzerland)*, *9*(11). https://doi.org/10.3390/su9112086

[50] Muhammad, s., anjum, a. S., kasana, m. I., & randhawa, m. A. (2013). Impact of organic fertilizer , humic acid and sea weed extract on wheat production in pothowar region of pakistan, *50*(4), 677–681.

[51] Musa, M., Program, S., & Gurung, T. R. (n.d.). *Status and Future Prospect of Organic Agriculture for Safe Food Security in SAARC Countries*.

[52] Nieberg, H., & Offermann, F. (2000). *Economic performance of organic farms in Europe*. Universität Hohenheim, Stuttgart-Hohenheim.

[53] Padel, S., Midmore, P., Padel, S., & Midmore, P. (2006). The development of the European market for organic products : insights from a Delphi study. https://doi.org/10.1108/00070700510611011

[54] Padiya, J., & Vala, N. (2012). Profiling of organic food buyers in Ahmedabad city: An empirical study. *Pacific Business Review International*, *5*(1), 19–26.

[55] Partap, T. (2010). *Organic Agriculture and Agribusiness : Innovation and Organic Agriculture and Agribusiness :*

[56] Paul, J., & Rana, J. (2012). Consumer behavior and purchase intention for organic food. *Journal of Consumer Marketing*, *29*(6), 412–422. https://doi.org/10.1108/07363761211259223

[57] Poerting, J. (2016). Poerting , Julia (2015): The Emergence of Certified Organic Agriculture in Pakistan — Actor Dynamics , Knowledge Production , and Consumer Demand , in : ASIEN 134 , 143-165 ., (April), 143–165.

[58] Pollitt, E., & Mathews, R. (1998). Breakfast and cognition: an integrative summary. *The American Journal of Clinical Nutrition*, *67*(4), 804S–813S.

[59] Porter, M. E. (1998). *Clusters and the new economics of competition* (Vol. 76). Harvard Business Review Boston.

[60] Pugliese, P. (2001). Organic farming and sustainable rural development: A multifaceted and promising convergence. *Sociologia Ruralis*, *41*(1), 112–130. https://doi.org/10.1111/1467-9523.00172

[61] Qureshi, Z., Fellow, N. S., & Economy, G. (n.d.). The Role of Public Policy in Sustainable Infrastructure, 19–23.

[62] Reganold, J. P., & Wachter, J. M. (2016). Organic agriculture in the twenty-first century. *Nature Plants*, *2*(February), 15221. https://doi.org/10.1038/nplants.2015.221

[63] Samie, A., Ahmed, M., & Kouser, S. (2010). Economics of Conventional And Partial Organic Farming Systems And Implications For Resource Utilization In Punjab (Pakistan), *48*(2), 245–260.

[64] Sangakkara, U. R., & Katupitiya, S. (n.d.). Organic Farming in Sri Lanka.

[65] Scialabba, N. (2000). Factors influencing organic agriculture policies with a focus on developing countries. In *IFOAM 2000 Scientific Conference, Basel, Switzerland* (pp. 28–31).

[66] Sitthisuntikul, K., Yossuck, P., & Limnirankul, B. (2018). How does organic agriculture contribute to food security of small land holders?: A case study in the North of Thailand. *Cogent Food & Agriculture*, *4*(1), 1–12. https://doi.org/10.1080/23311932.2018.1429698

[67] Stewart, D. W. (2015). Why Marketers Should Study Public Policy, *34*(2006), 1–3.

[68] Thilmany, D. (2006). The US organic industry: Important trends and emerging issues for the USDA. *Agricultural Marketing Report (Colorado State University. Dept. of Agricultural and Resource Economics); AMR 06-01*.

[69] Thøgersen, J. (2009). Consumer decision-making with regard to organic food products. *Traditional **Food** Production and Rural Sustainable Development: A European Challenge*, 173–192.

[70] Thøgersen, J. (2009). Consumer decision-making with regard to organic food products. *Traditional Food Production and Rural Sustainable Development: A European Challenge*, 300. Retrieved from http://mfile.narotama.ac.id/files/Economics/Traditional Food Production and Rural Sustainable Development/Chapter 11 Consumer Decision-Making With Regard To Organic Food Products.pdf

[71] Thøgersen, J., de Barcellos, M. D., Perin, M. G., & Zhou, Y. (2015). Consumer buying motives and attitudes towards organic food in two emerging markets. *International Marketing Review*, *32*(3/4), 389–413. https://doi.org/10.1108/IMR-06-2013-0123

[72] Thorsøe, M. H. (2015). Maintaining Trust and Credibility in a Continuously Evolving Organic Food System. *Journal of Agricultural and Environmental Ethics*, *28*(4), 767–787. https://doi.org/10.1007/s10806-015-9559-6

[73] Tiraieyari, N., Hamzah, A., & Samah, B. A. (2017). Organic Farming and Sustainable Agriculture in Malaysia : Organic Farmers ' Challenges towards Adoption, *10*(4), 1–7. https://doi.org/10.5539/ass.v10n4p1

[74] Ullah, A., Noor, S., Shah, M., Ali, A., Naz, R., Mahar, A., & Kalhoro, S. A. (2015). Factors Affecting the Adoption of Organic Farming in, (June), 587–593.

[75] Underwood, T., McCullum-Gomez, C., Harmon, A., & Roberts, S. (2011). Organic Agriculture Supports Biodiversity and Sustainable Food Production. *Journal of Hunger and Environmental Nutrition*, *6*(4), 398–423. https://doi.org/10.1080/19320248.2011.627301

[76] WCED, S. W. S. (1987). World Commission on Environment and Development. *Our Common Future*. Oxford University Press London.

[77] Willer, H., & Lernoud, J. (2018). The world of organic agriculture: statistics and emerging trends 2018. *The World of Organic Agriculture: Statistics and Emerging Trends 2018.*

[78] Willer, H., Lernoud, J., & Kilcher, L. (2014). The world of organic agriculture: statistics and emerging trends 2014: Frick. *Switzerland: Research Institute of Organic Agriculture (FiBL) & Bonn: International Federation of Organic Agriculture Movements (IFOAM)*.

[79}Wright, J. (2012). *Sustainable agriculture and food security in an era of oil scarcity: lessons from Cuba*. Routledge.

[80] Wynen, E., Merrigan, K., & Sciallaba, N. (1998). Evaluating the potential contribution of organic agriculture to sustainability goals. *Environment and Natural Resources Service, Research, Extension and Training Division, Sustainable Development Department, Food and Agriculture Organization of the United Nations, Rome*.

[81]Yasin, M. A., Ashfaq, M., Adil, S. A., & Bakhsh, K. (2014). Profit efficiency of organic vs conventional wheat production in rice-wheat zone of punjab , pakistan, *52*(3).

[83] Zagata, L. (2012). Consumers' beliefs and behavioural intentions towards organic food. Evidence from the Czech Republic. *Appetite*, *59*(1), 81–89. https://doi.org/10.1016/j.appet.2012.03.023