

Towards Developing Sustainable Agriculture In Lebanon

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Abstract: Rural development is progressively seen as an important for solution for expanding the financial viability of large areas, stimulating social recovery and enhancing the life style of rural groups. Many countries try to eliminate rural neediness and to have substantial potential in attracting visitors and social development looking for new progress. This paper argues that the social event of sustainable activities and attractions, and the development of rural life, empowers co-operation and organizations between groups and government. Meaningful community participation, together with public sector support, presents opportunities for the development of small-scale original sustainable and community projects in less developed areas. This paper interrogates the development of rural routes in Lebanon and highlights factors critical to its success.

Index Terms: Rural Development, Community, Participation, Social Development

Introduction

Energy poverty is a crucial and major problem since almost 1.3 billion individuals lack energy power (IEA 2015). Extremely, the exterminate rate is low and falling in numerous nations as populace development attempts to give more individuals access to power (Chester 2014). Rapid changes in innovation and the accessibility of renewable energy at constantly falling costs stimulated few nations to light the darkness and fill in the hole between the foginess and renewable energy. To audit the degree of energy lack and clarify why neither poor nations nor the developed nations have effectively taken this issue into consideration. We additionally examine known components that have made a situation helpful for the spread of sun based force. To show the social response to such development, we clarify the segment three most regular methodologies to sun oriented charge. Social development has an advantage based on flexibility. In order to do that the layout attained by A.T. Kearney Social Enterprise Accelerator (S Kearney, 2014) can be examined for farming remarkable social organizations. There is need to empower the flexibility of the financial structure, thus an adjustment of the model is proposed. The layout ends by highlighting potential advantages and difficulties confronting sun power. Finally, the possible benefits and obstacles facing solar charge and warming are to emphasized. (Houndonougbo, 2015) The questions we ask here. What is meant by energy poverty? Does sustainability help us overcome energy poverty? What are the other solutions?

1.2 Back ground

The world is changing quickly in regular life. There is some confusion about what "green" means. The term is sometimes utilized incorrectly as a part of a push to speak to reliable green consumers. The roots of the term green are unclear while some trust it was acquired from the 1970s green governmental issues (Curzons, 2001).

Whatever the genuine beginnings, the term is intended to characterize the idea of reasonable and eco-friendly procedures, substances and renewable energy (Laughlin, 2002). The response to the inquiry, "Why do we need to go green?" is as confusing as the environmental issues the world populace faces. It isn't only the recent generation that must manage this huge emergency; it will be a test for future generation regardless of the fact that more prominent move is not made throughout the following couple of decades. Some countries have sought to apply this strategy by building botanical sustainable gardens, for the most part include walled gardens, in which are shown a wide scope of plants in different situations, fittingly marked with organic names. More often than not, they have long-standing relationships with logical examination associations that are occupied with inquiring about plant scientific classification and different parts of herbal science. Be that as it may, when they were at first stable, their dispatch was not as involved as it is today, in that their part has been reached out to envelop the test of holding recorded buildups of living plants for the reasons for: analytical research, protection, shows case and teaching.

1.3 Purpose of the Study

Lebanon among the urban countries suffers from poverty, although it has a suitable climate which can be invested effectively, by using a good management for its natural recourses, winds, infrastructure water, sun power can achieve a sustainable agriculture. The purpose of this study is to explore the effect of sustainable development on rural development.

1.4 Significance of the Study

Lebanon has always been known for its lush green areas. Therefore, sustainable projects are more essential to its development and growth.

2. LITERATURE REVIEW

Among the numerous ways that sustainability has been considered, the simplest and most major are: "the capacity to manage" or, put another way, "the ability to persevere." (BJ Brown, 1978) Today, it is by no means certain our society has the ability to sustain – at any rate in a manner that the nine billion individuals expected on Earth by 2050 will all have the capacity to achieve a critical personal satisfaction. (Costanza, 1995) The planet's environments are falling and the climate is changing. We are consuming so much, thus rapidly, that we are as of now living a long ways past the world's ability to

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sustain us. But about a 6th of our associated people go to bed hungry every day: both a surplus disaster and a source of social and political confusion. In the temporary, our globalized world is more unified and random than any other time in recent memory, making all of us more powerless. (Morelli, 2011). While sustainability is about the future of our society, for today's industries and businesses; it is likewise about business achievement. The order to change organizations to regard natural points of captivity while satisfying social needs and needs has turned into an unparalleled stage for development on methodology, plan, accumulating and brand, offering huge chances to resist and to adjust to a quickly developing world. To endure through, we as a general public must change our business sectors – both how we create and expend, and the very courses in which we characterize and measure regard and development. This is a major test, and not only for business and economic matters. It is a call for huge social, political, mechanical, social and behavioral move. We will require governments to set motivating forces, targets and guidelines for a level playing field, common society on-screen characters to consider us responsible and to explore different roads regarding better approaches for assigning social effect, and each of us to take activities in our own particular lives to compensate reasonable plans of action and.

2.1 Rural development and sustainability

Rural development programs have appeared across Europe since the early 1990s; these programs highlight the development of rural areas' capacity to support themselves through', 'capacity building', 'community-based initiatives' and 'partnerships' (Ray, 2000; Buller, 2000; Shortall, 1994). These creativities, and programs on these activities, concentrated on increasing investment, their general nature, representativeness and what was implied by community. (Shortall, 2008) Over the centuries many human rights communities put an effort to help poor countries to get out of the poverty cycle, by using sustainable rural development which is essential to the economic, social and ecological viability of countries and to enhance admission to reliable and affordable energy services, including renewable and alternative sources of energy for sustainable rural development. (2030 Agenda for Sustainable Development)

2.2 Sustainable rural development a policy story

The connection of the three words 'sustainable', 'rural' and 'development' as a term meaning a particular method was possibly first made in 1986 in a hotel in Geneva. (Scoones – 2015) Rural development is the method for enhancing the personal satisfaction and financial prosperity of individuals living in moderately separated and poorly occupied areas. (Smith, 2008) Rural development has become a natural extension of the organization's work around the world. In Lebanon, the absence of educational and economic open doors in country zones has driven most young individuals of the work force to seek these opportunities in urban areas or abroad. Subsequently, AFDC's (American First Day Cover Society) advancement work in country regions has a center of making such open doors in towns for the most part by creating reasonable income making projects. Inside this system, AFDC executed a few activities in various Lebanese rural areas, particularly those confronting a few economic and environmental difficulties, among which are low openings for work, poverty, movement and delicate biological systems...

These undertakings focused on country groups all in all, and economically minimized social gatherings, for example, local ladies and farmers specifically. (Journal of Urban Economics, 2000)

3. Sustainable development

Philosophies of sustainable development have a long history in the literatures of both development and ecology. Sustainable development is right now being wanted after the situation of an increasingly globalized world, however one which is likewise represented by poverty. The worldwide test of sustainable development lies in complex relationship of environment, social and economic development. What is sustainable development? Is it necessary to achieve rural development? According the Rio Declaration on Environment and Development Agenda 21 in 1992, reasonable improvement turned into a worldwide methodology for arranging experts, draftsmen and improvement authorities to address human progression impacts on the ecological emergency. Reasonable Development, to guarantee broadening of neighborhood economies through expand empower economic movements. It needs likewise to give a superior distribution of advantages through expanding on movements as it expands on normal social and economic exercises to give reasonable advantage spreading (Fuller Bultjens and Cummings 2005) The Earth Summit (UNCED) , which occurred in Rio de Janeiro in 1992, perceived how environment and improvement issues are embracing, Agenda 21 delivered a worldwide project of activity for economic advancement it stresses the significance of enhancing social , economic and ecological quality in urban ranges, it concentrated on ecological substance , water , health , transport and strong waste management , the earth meeting expanded ecological issues with other social and economic strategy issues. The World Summit for Sustainable Development (WSSD), held in August 2002, encouraged in its arrangement of usage that countries ought to find a way to make progress in the plan and explanation of national methodologies for economic improvement also, start their usage (UNDESA, 2004). To build Sustainable Environment requires investment in: (Markandya , 2013)

1. Renewable energy resources.
2. Efficiency in the use of a water and electricity.
3. Design and implementation of compact cities.
4. Increase green area
5. Reliable, affordable and fast public transportation.
6. Waste management collection and recycling systems.

Huge changes begin with little steps - people, families, organizations and governments would all be able to have any kind of effect in our planet's capability to provide for generations to come. We realize that plants are vital to the equality and strength of nature that backings life on earth. They are a definitive source of the oxygen we inhale and the food we eat, and they give the crude materials to safe house, medicines, powers and countless different items on which people depend. Acts can possibly benefit natural and hostage ecological harm. A feasible act can clean the air and water, build energy effectiveness, restore living spaces and at last 'give back' normal advantages critical to human and biological security. Improving protection and manageability safeguards our common assets, enhances our personal satisfaction and guarantees the reliability of our groups and nature.

Sustainable development is the progress that meets the needs of the present without bargaining the ability of future generations to meet their own needs. (World Commission on Environment and Development, 1987: 43)

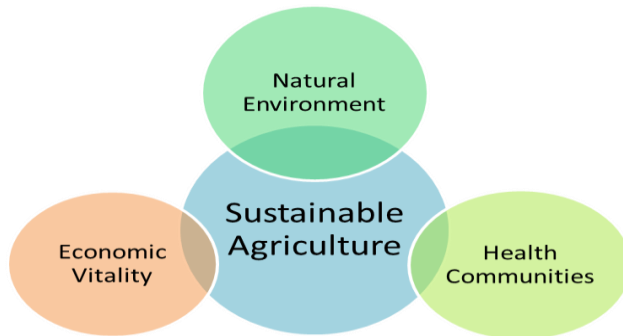


Figure 1 Sustainable Agriculture

3.1 Urban sustainability

Urban sustainability is the way toward creating and redeveloping urban areas as it were that will increase the urban environment, economy and advance value or social equity, urban sustainability is the future objective of urban reasonable improvement. (Martino 2009). We should know not just of the ways in which social, economic, and ecological protection can empower economic development which thus can add to more projecting actions in the field of natural administration. Sustainability purposes can be come to by economic and governmental change and new approach thoughts like understanding development, urban development limits. Many of the believers of sustainability construct their beliefs with respect to extremely cynical viewpoint of the world, they expect that the assets of today will be the assets of tomorrow and that human will be not able find new ones. (Bruegman 2005) Among the Urban 21 Conference (Berlin, July 2000) they characterized the practical urban progress by enhancing the personal satisfaction in a city, including environmental, social, political institutional, social and financial parts without leaving a problem on the future generations, a problem which is the consequence of a decreased nature capital.

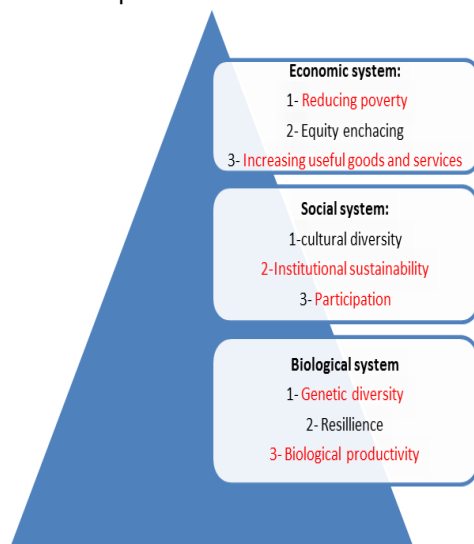


Figure 2: Object of sustainable development

As we notice from the graph, the objectives of sustainable development are to developing countries in every level, from global countries to urban one. Sustainable Development = Economic Development + Social Development + Environment Development. Our study was designed and formed based on precise studies and numbers in addition to feasible studies and experiments. From previous studies we realized by using an effective management of local resources (seed varieties, soil fertility, water...) can contribute to meaningful socio-economic and ecologically sustainable development, especially in poorer areas. (Preston, 1991)

Hypothesis

A sustainable agricultural project enhances green practices and decrease poverty. Sustainable agriculture is the future we want for our children, it offers solutions to the challenges we face worldwide. The world has to join all its forces together in order to reduce poverty and ensure food security for all.

H1: Sustainable agriculture positively affects rural development.

4. Analysis & discussion

Among the previous fifty years, agriculture improvement approaches have been wonderfully fruitful at emphasizing external inputs as the way to expand food creation. This has prompted development in worldwide utilization of pesticides, inorganic fertilizer, animal feed things, and tractors and other machinery. (Buechler, 2005) These external inputs have, nonetheless, substituted for characteristic procedures and assets, version them less capable. Pesticides have replaced organic, social, and mechanical techniques for controlling bugs, weeds, and diseases; inorganic fertilizers have substituted for livestock, fertilizers, suppliers, specialists, and expansions instead of from neighborhood sources; and fossil energizes have substituted for privately created vitality sources. The fundamental test for sustainable farming is to improve utilization of these interior assets. This should be possible by minimizing the outside inputs used, by recovering inner assets all the more successfully, or by blends of both. (Hamade, 2011) Proof is presently rising that recreating and asset saving developments and practices can bring both ecological and financial advantages for agriculturists, groups, and countries. The best confirmation originates from nations of Africa, Asia, and Latin America, where the worry is to build food generation in the lands where fanning has been to a great degree untouched by the modern bundles of externally supplied technologies. In these random and remote lands, a few farmers and groups' implementation recreating developments have generously improved rural yields, frequently utilizing just few or no outside inputs (Bunch, 1991; GTZ, 1992; UNDP, 1992) To have successful sustainable agriculture and a high output, there are many steps, not only by farmers implementing new technologies, but they have made use of resources, resources management such as soil and water protection, nutrient reusing, numerous cropping, waste recycling. Agriculture in Lebanon is the third most important sector in the nation after the tourism and industrial sector. It contributes almost 12% to GDP and utilizes around 15% of the dynamic populace. (Landau - Southern Economic Journal, 1983) Lebanon's agriculture, which offers fruitful area, and fresh and healthy produce, confronts a few difficulties as of late. Uncalled for agricultural works on prompting soil dissolution and poverty, exhaustion of underground water

assets, water pollution and security powers from improper use of pesticides and fertilizers, and natural contamination from indiscriminate dumping of killing waste and creature farms are from the principle problem of this sector. Agriculture is also diminishing due to lack of investment this leads to inability to buy This results in the inability to buy fertilizer to nourish the soil and medicines to combat insects. (Ministry of Agriculture, MOA) The key question how can this problem solve? Can we talk about sustainable agriculture? Before we answer these questions lets define sustainable agriculture. The word sustainable has turned out to be extremely popular as of late and it is currently used to show a considerable measure of things. Be that as it may, what is sustainable agriculture? Basically, sustainable agriculture is the creation of plant and creature items, including food, in a way which uses refining procedures that secure the earth, general wellbeing, groups, and the welfare of creatures. Sustainable agriculture allows us to produce and enjoy healthy foods without bargaining the ability of future generations to do the same. The way to sustainable agriculture is finding the right harmony between the requirement for food generation and the protection of natural biological communities. Sustainable agriculture additionally advances financial solidness for ranches and helps agriculturists to better their personal satisfaction. Farming keeps on being the greatest business on the planet with 20% of the Lebanon's population working in it. (ESCWA, 2013) Sustainable agriculture does not speak to an arrival to per-industrial revolution strategies; rather it joins normal protection minded farming procedures with cutting edge developments. (Duma, 2016) Sustainable system use recent equipment, confirmed seed, soil and water protection reviews and the most recent developments in sustaining and taking care of animals. Emphasis is set divesting crops, developing soil, expanding products and domesticated animals and controlling pests usually. (Reganold, 1990) Now day some countries use renewable energy which provides alternate sources in all its business sectors. They use solar energy, wave power to produce electricity, sustainable water infrastructure (water refining). These methods will have the potential to introduce improvements to agriculture sector in Lebanon which in return will affect Lebanon's economy.

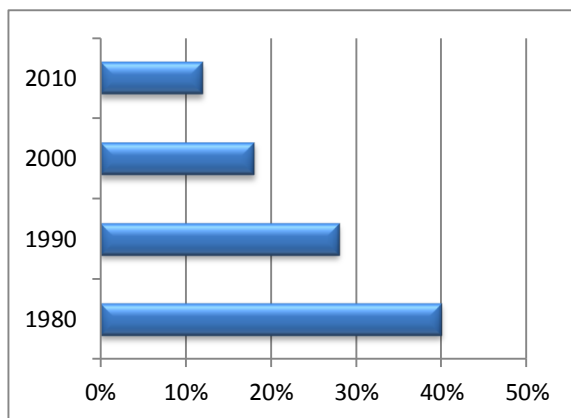


Table 1 .The agriculture sector in Lebanon between 1990 and 2010

The reason for this decline to several factors, among the climate change represents extra weakness to what's to come

of Lebanese regions; where the economic effects because of the changing climate would be experienced in various courses over the areas and locations. Lebanese Ministry of Agriculture (MOA), in its 2010 procedure and arrangement, finds that the impacts of climate change expanded dangers of desertification. The methodology does however for the most part address food security and adjusted improvement by expressing it will "provide nutrition securities, fight poverty , give adjusted advancement between areas, diminish expense of food, improve creation to take care of national demand" as one of its points. The improvement of the agricultural section has not been unchanging crosswise over districts, despite the fact that in its structure the MOA has local administration that out to the different governorates. Another problem faced agriculture sector in Lebanon is the rural people's knowledge for some, what rural individuals know is thought to be "simple," "unscientific," or overcome by development, thus formal exploration and expansion must "change" what they know in order to "create" them.(Belenky – 1986) An option viewpoint is that immediate learning is a significant and underused asset, which can be considered, gathered, and joined into progress exercises. It is important to observe that rural farmers are constantly required in dynamic learning, in (re)inventing advances, in adjusting their educating frameworks and business systems. Understanding and supporting these procedures of agricultural development and experimentation have turned into a dynamic center in encouraging more achievable sustainable agricultural business with its strong locality particular nature. So we have to encourage the participation of farmers to adapt sustainability in their farm work. (Chambers, 1993) In order to avoid the disaster Lebanese Ministry of Agriculture (MOA), formulated a strategy for the years 2010_2019 utilizing a participating methodology as a part of key arranging under the structure of the EU financed Agriculture and Rural Development Programed (ARDP). (Karam, Food security and climate change in dry areas, 2011) This system included eight principle axes of implementation for expanding effectiveness of the Lebanese agricultural items and refining farming economic development. The system recognized needs and key areas of intervention for the development of the segment including the activation of satisfactory money related assets, improvement of a proper administrative structure, and the stimulating of the Ministry of Agriculture limits and expansion capacities. This technique has fulfilled various activities along its different axes as follows:

- Updating the regulatory, frame work.
- Advancement agricultural infrastructure and increasing effectiveness of natural resources use.
- Developing value chains, focusing in better, quality, and production.
- Conservation of natural resources, soil, forest, biological diversity.

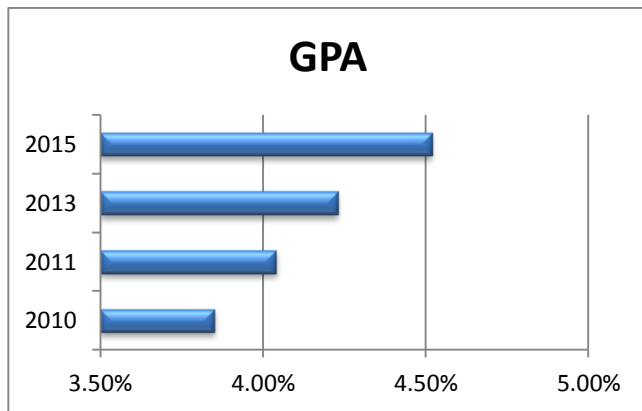


Table 2: The Lebanese agricultural GPA

The Lebanese agricultural GPA raise from 3.85% in 2010 to 4.52% 2015 owing to the implementation of MOA, by using sustainable agriculture development it expect to reach high productivity in the coming years. (MOA, 2015)

5. Conclusion

Developing nations challenge an extraordinary test in the first half of the 21st century. The world's population is required to achieve 9 billion by 2050, and 8 billion individuals will live in creating or rising nations. Interest for nutrition is responsible to develop by no less than 70 per cent 2. (Tilman, 2011) On the off chance that we are to defeat hunger and malnutrition, then farming creation should be supported, particularly in the nations where populations are responsible to become most. In a large number of them, characteristic assets are as of now under anxiety, and this pattern will be decreased by environmental change. Assets must be utilized ever more effectively. Sustainable agriculture offers answers for the difficulties we confront worldwide. We are prepared to unite with our collaborators to cooperate to get it going: decreasing poverty and ensuring nutrition security for all. The future we want for our children is through sustainable development. Unsustainable development is a term that first appeared during the second half of the twentieth century, the period of progress of human civilization that was the result of the scientific and technological advancement. This progress led to economic growth and expansion but had negative impacts on the environment if not to say the whole planet capacity of endurance. Natural resources are finite, and the over extraction and consumption will result in certain Modifications in the ecosystem as well as environmental impacts like climate change, pollution, land-use change and loss of biodiversity. This was the distress signal of the coming disaster that brought governments and countries together to launch the concept of "Decoupling economic growth with environmental degradation". (Lepers, 2003) To enhance the notion of decoupling, certain new measures should be taken to find alternatives for resource extraction. Every material resource is theoretically finite in terms of usage, and scarce in economic terms that set their basic price. But few material resources such as wind, sunshine and tidal energy cannot be depleted. Resource use reduction will be tough, but this is an urgent need to mitigate the negative results of the industrial growth. (Jacobson, 2011) A solution for the problem of environmental degradation is to shift to use the alternative resources that are

finite in what we call sustainable projects. The wise use of these resources will help to attain sustainable development in the coming future. Such projects may not be profitable but the energy efficiency will pay on the long term. New policies should be issued by governments to promote the notion of energy efficiency through environmentally friendly projects. The goal of continued growth is to be a sound one mainly in low and middle- income countries where growth means more health, better education and more safety from various threats of wellbeing. Also, high -income countries can have solid growth if it is based on resource saving technologies that do not disrupt planetary boundaries. We have responsibility towards the coming generations to leave them a livable planet, so we must think ahead morally and practically to ensure the well- being of generations not yet born. The new trend for development should be coupling economic growth with environmental sustainability.

6. Appendices

6.1. Questionnaire

1. My gender is:

- Female
- Male

2. My age bracket is:

- Less than 24 year
- Between 25-36 years
- Between 37-46 years

3. My certificate is: If currently enrolled, highest degree received.

- No schooling completed
- Some high school, no diploma
- High school graduate, diploma
- Some college credit, no degree
- Bachelor's degree
- Master's degree
- Doctorate degree

4. Employment Status: I am currently:

- Employed for wages
- Self-employed
- Out of work and looking for work
- Out of work but not currently looking for work
- A homemaker
- A student
- Retired
- Unable to work

5. Please select the industry you are working in:

- Government
- Manufacturing
- Service
- Other

6. To what extent do you agree or disagree that you are knowledgeable about sustainable agriculture?

- Agree
- Strongly Agree
- Disagree
- Don't know

7. Kindly, state how much you agree with the following statements, (agree, partly agree, partly disagree, disagree, and don't know):

- Environmental balance is one basis for sustainable agricultural practices.
- An advantage of sustainable agricultural practices is reduction in the use of chemical fertilizers.
- Farmers in sustainable agriculture live more in harmony with nature.
- Economy gains when employing sustainable agricultural practices are not convincing.
- Net farm income may decrease when a producer implements sustainable agricultural practices.
- Sustainable agricultural systems can improve income on a farm.
- The adoption of sustainable agricultural practices is slow because farmers lack the knowledge to implement them.
- Sustainable agricultural practices help protect the environment and our natural resource.
- There may be insufficient labor for the workload required in sustainable agricultural system.
- Sustainable agricultural systems should produce an adequate food supply to feed the world population.

8. What do you consider to be the greatest barriers for a successful global Sustainable Agriculture?

- Lack Knowledge or Skill
- Land Management
- Government Program
- Environmental Management
- Environmental Management
- Financial

9. Rate the importance of direct involvement below in the implementation of Sustainable Agriculture (1 being lowest, 9 being highest)

- Government program
- High management team
- Sustainable Development
- Human capital characteristics (age, education)
- Finance
- Labor
- Technology
- Environmental characteristics
- Economic and Social regulations

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