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Effectiveness of Sustainable Agriculture and Industrial Agriculture in Africa

Al Khun Naizi[1], Zish Rahmen[1]

University of Karachi, Pakistan

Abstract

The aim of this analysis is to examine the efficacy of sustainable farming in Africa and industrial farming. Sustainable agriculture as an approach to food production that combines agriculture's economic, social and environmental dimensions. The agricultural societies in Asia and Africa have effectively followed these values. The growing evidence and accessible scientific review of the creation of programs suggests that sustainable interventions can be highly successful to enhance productivity, promote protection of soil and water incomes and to ensure food safety; improve agricultural, wildlife and plant health; increase natural disasters and climate change resistance, minimize greenhouse gas emissions and promote societies. This demonstrates that the efficiency of organic farming has a positive influence in different countries on the future of agriculture.

Keywords: Agriculture, Industry and Agricultural effectiveness

Introduction

Sustainable agriculture is an effective management of capital for agricultural businesses that helps human needs to change thus preserving or increasing the standard of our climate and conserving nature. The real sense of sustainable farming is economically sustainable and accomplished through: reduced electricity use, minimized environmental footprint, reduced packaging, increased local shopping with shorter food supply chains, fewer manufactured food, collective gardens and gardens plus homes, etc.

The usage of non-renewable natural resources such as natural Gas (which used as a feedstock for fertilizers) and minerals in sustainable farming relies heavily on restoring nutrients to the land (such as phosphate). Land, sunshine, climate, and water are the most significant influences in the use of natural resources.

Sustainable agriculture is an adaptation of the agricultural field of the principle of sustainable production (Thrupp, 2000; Sivakumar et al., 2000; Spiertz, 2009; Brodt et al., 2011; Von Wirén-Lehr, 2001). There are three main pillars: physical, social and ecological: the principle of sustainability agriculture. The principle of sustainable development focuses on three sustainability aspects

Agricultural production, food safety and livelihood can be enhanced by smallheld farmers in Africa and Asia using sustainable methods that use resource-saving technology and build on their own understanding of the advantages of sustainable agriculture but need further support and an overall improvement of this strategy. 70% of this portion of the planet is rural farmers and landless, with almost 1 billion hungry. Low-productivity, shortage of assets and resources and poor business dynamics have long trapped marginalized smallholders into a cycle. They still encounter some new obstacles. Many crop and farmers are particularly susceptible to

climate change impacts. Land erosion and water depletion are rapidly jeopardizing food and agricultural communities' wellbeing. In the meantime, there is progressively potential for the expansion of agricultural development to new soils and the market for current agricultural property, from international buyers, business and urban developers, is also growing. The surge in food prices after the global food crisis occurred between 2007 and 2008 presents additional difficulties for small growers, both food purchaser and fertilizer purchaser at the same price. In a world where climate shifts, the food demand and the soil, land and water supplies are rapidly being pressured and protected, what kind of agriculture will solve poverty and hunger

Sustainable Agriculture Conditions

In general, farmers have not been provided with sufficient agricultural extension capital in relation to sustainable agriculture, except for small land ownership. In the absence of higher-educated growers, they are unusual in reading or making remarks on their plots.

In addition, farmers must confront the phenomenon of naturally occurring shifts affecting the atmosphere and the presence of pests. It is no wonder that farmers are quickly stuck with the use of toxic pesticides in factories in the middle of this insecurity.

The application of pesticides becomes an immediate remedy that pesticide producers, working with extension staff, frequently have.

Pesticide enterprises sometimes penetrate by way of promotional advice. Furthermore, when they purchase pesticide products identified by the pesticide industry, the pesticide companies also offer farmers donation in the form of free voyages.

Pesticide providers recently sell farm insurance policies that no longer bind farmers to purchase pesticide drugs. Pesticide firms that are interested in seeing how small farmers are always in debt to meet agricultural resources sell insurance policies.

Of course, the usage of pesticides would raise the costs for maintaining the farmer's own land per lot. The objective farmers ought to accomplish will therefore be to pursue the economic advantages of land (at least "split even point").

This would enable the agriculture sector to achieve efficiency. Consequently, the protection of land habitats is no longer a priority for producers, aside from the financial state of their vulnerability.

Small farmers can take logic further into consideration such that the emphasis is on abundant harvests. Farmers are "disposed," to purchase costly chemicals and fertilizers, to ensure abundant harvest.

The integrated pesticide control principle is no longer a choice. Because of the financial expense demands, farmers continue to use pesticides as an immediate insect control, without taking into account long-term impacts.

Data from studies and in-depth interviews with farmers at West Java's Pantura have shown that farmers are already aware of sustainable farming practices.

However, because of their reliance on pesticide use, structural and social restrictions have meant they have not been able to protect their rice crops against plague attacks. On the other side, they have encountered a low unhulled rice purchasing price in recent years. Thus, while the yield is large, the debt for agricultural resources to buy chemicals and fertilisers has not been compensated.

The food protection principle should be consistent with farmers' resilience. In the other side, there are so many small-scale farmers with vulnerable lives. The participation of the State is required in the opinion of the author. Small farmers are highly fragile and cannot escape the interconnection between them. The vocabulary of the philosophy of sustainable agriculture may also not be achieved.

To give farmers advice and unlock farmers' pesticide dependency. Extension of pesticide active ingredients, including those that adversely affect the rice farming environment, is needed. The main thing is not to encourage farmers without assistance to face vulnerability.

There have been prohibits in many countries by municipal authorities for the usage of active compounds such as neonicotinoids, carbofuran and fipronil found in insecticides. These insecticides can also be easily used and used by farmers to hold pests away in certain parts of Indonesia.

If the principle of food safety in sustainable agriculture is to be reiterated so importantly, then farmers' resilience is vital for the lives of small-scale farmers.

Urgency of Sustainable Agriculture and Agricultural Industry

In order to align food protection with climate change debate Sustainable agriculture is a term utilized by the world food agency FAO (Food and Agriculture Organization). FAO views sustainable cultivation as a significant attempt to mitigate pollution from CO2.

Based on studies from the FAO, farming is one of the pollution contributing industries, since it increases air temperatures between 1°C and 2°C. As decided at the Climate Change Summit, which included in the Paris Accord, emission mitigation has since been a global consensus.

Changes to agriculture and food processes would incorporate economic and technological changes to address these problems. The availability of seeds that are drought tolerant and flood resistant is one of the reasons for technological changes. Furthermore, modern machinery cultivation may be one form of increased farm productivity. The presence of pesticides promotes heavy usage of pesticides and even the active agents of pesticides are environmentally hazardous. The debate on sustainable farming practices has been ideal; nevertheless, the issues relating to the supply of pesticides and the method for addressing pesticides cannot really be resolved.

In reality, the integrated pesticide management principle is far from perfect. The Green Revolution transformed the farmers' theory into no more 'respect' about the environment as it concentrated more on productivity.

Furthermore, sustainable agriculture appears to ignore the most supportive player, namely 'resilient farmers.' The art of sustainable farming is In the face of a philosophy of sustainable agriculture in advance of climate change, this point is definitely valid.

Shift in climate is seen as a challenge to cultivation for food crops. Researchers warn that the effects of climate change will greatly impact crop production in the future. In recent years, governments, particularly in Africa, have committed themselves to welcoming new policies and financing of small agriculture. However, as described by the paper, donor, government and proponent support solutions to Africa claim it is costly for farmers to use artificial fertilizers and pesticides and is very hard to achieve. As has occurred in Africa since the Green Revolution so far, environmental programmes, which only deal with short-term gains, appear to be

ignored. In its alternative, ecological approaches, the Green Revolution proposes artificial chemicals.

For political leaders around the world, the experiences of the Asian Green Revolution have been quite interesting. The achievements of the Green Revolution, particularly in the 1960s and 1980s, in increasing crop yields and reducing hunger are not denied. However, this phase of transition was stopped in the 1990's and today for Asian governments is a huge obstacle. One trigger of this is the serious strain on the system's natural resource foundation, which is generally accepted as a massive monocrop. Soil depletion requires farmers to raise the amount of fertilizer needed to preserve their output. This reduces their profit margins which is one of the reasons why farmers are in debt. The Asian Green Revolution has more significant implications, such as the lack of farming biodiversity, socioeconomic injustice and the negative impacts of pesticides on farm worker welfare, which could allow the government more thinking.

The Effectiveness of Sustainable Agriculture for Society

Sustainable agriculture as an approach to food production that combines agriculture's economic, social and environmental dimensions (Yunlong & Smit, 1994; Specht et al., 2014; Rigby & Cáceres, 2001). It uses technology which retains the resources and materials available in agriculture and builds proportionately on the ability of farmers and community organizations, minimizing and avoiding chemical inputs.

The agricultural societies in Asia and Africa have effectively followed these values. An the number of data - available data, as well as academic analyzes from programme, show that sustainability can be effective in increasing output, income and food security, promoting soil and water conservation, biodiversity and plant health; increasing disaster resilience and climate change; reducing emissions of greenhouse gases.

The introduction of modern methods for developing rice to reduce the usage of agrochemicals and water (known as the rice intensification system) contributed to the rise in farmer yields from an average 2.5 tons per hectare to 3.7 tons per hectare. More than 3 000 households have taken advantage of conservation farming in Zimbabwe through Christian Aid collaborators ZimPro and Trust Dabane. This encourages farmers to raise their sorghum, millet and maize yields substantially, thus contributing to household food security. In other nations, by using natural practices to treat pests, producers were able to limit the usage of pesticides. Income and health services have been given.

This strategy is, however, still quite badly supported. Governments and contributors need to quickly re-equalize their efforts on intense external solutions for supporting productive agro-ecological methods to their extent. This can be achieved by a resource-conserving strategy re-equalization of government subsidies and through reinvigorating study and community outreach initiatives which are central to decision-making by small farmers, organizations and networks. The national seed legislation should concentrate on promoting the interests of farmers and their access to seeds of their choice, be they new or local. Farmers' privileges to raise, preserve and trade conventional species must also be respected. The government still needs to increase access of poor people to land and the safety of small farmers, both important prerequisites for food protection in rural areas and the implementation of sustainable agriculture. The government needs to foster and harness the capacity of the private sector to contribute to sustainable farming and to enact effective legislation to ensure, for instance, that

government position as a resource for input recommendations for farmers is not replaced by the private sector.

It should be followed by initiatives that allow markets for small-scale producers to be created and accessed, and by foreign trade policies which protect the role of domestic producers in the national food system.

Human Social Life

Ecological (planetary) natural or triple-pillar sustainability. The triangular foundation of sustainability in the economic dimension (sustainable agriculture) is linked to the conception of optimizing the income stream, which may at least be achieved by retaining the productive properties which are used to achieve this revenue. In this economic dimension, the principal measure is the degree of economic effectiveness, competition, extent and increase in value added, both in terms of benefit and economic stability (Berger et al., 2017; Fernández et al., 2016).

Social Dimension

Group orientation is linked to the social security needs of the community, embodied in a harmonious social life: social dispute avoidance, maintenance of cultural diversity and socio-cultural resources including the defense of ethnic minorities.

Environmental Dimension

The need for the stability of natural environments, including biological living systems and natural materials, is stressed by nature. This involves the conservation of habitat, biological or genetic supplies, resources for water, agroclimate and soil.

There are a multitude of threats the African continent faces as well as food adequacy is concerned: population growth persists and low productivity in agriculture is at risk; climatic change is exacerbating; rural and urban migration (which discourages young people from becoming farmers), extreme deforestation, drought and conflict. The combination of higher food requirements, insufficient harvests and deteriorating land conditions needs a new design for the agri-alimentary sector to ensure food safety (Berger et al., 2017; Fernández et al., 2016).

Over the decades, several policy instruments to improve agricultural production have been introduced by African governments. Most farmers could not accommodate it, though. Many do use hops and machetes, or use ancient cultivation processs and patterns passed down by their ancestors since centuries ago. In the other side, because of financial difficulties, the current agriculture system is underdeveloped. For small farmers, who on average own just 1.6 hectares of farmland, modern farm machinery and equipment is too high a cost.

Africa has a chance to improve today. African businessmen are getting more and more involved in engaging in attempts to improve agricultural production. Increasingly inexpensive and available is cloud-based, connected, open sources, and other modern platforms such that even small farmers get it. For example, satellite or drone aerial imagery, weather forecasts and soil sensors are making plant growth in real time manageable. In case of irregular development or other causes, the device automatically provides early notice.

The new technology advancement as discussed above attracts young people to agriculture. They saw that applications alone do not feed citizens around Africa, many of whom have been farmers.

However, there are several issues yet to be tackled until the effect of new technologies on African farming structures is assessed too early. The high incidence of farmers' analphabetism, language barriers, lack of an extensive land chart, large number of agricultural lands in regions with small connectivity, farmers' behaviour which is still unwilling to alter their agricultural patterns and minimal electricity facilities in the area are some of these. There should be no lengthy and only idle storage in different areas that provide agricultural goods.

Digital technologies provides producers, consumers and businesses with enormous resources to enhance the productivity of Africa's food production and consumption. The use of technology in turn would have consequences for the improvement of fiscal, social and environmental conditions by applying precision farming to an effective supply chain management.

One thing that raises hope for start-up networks in agriculture is that the problem of hunger is being overcome in Africa by transforming the industry which provides employment for most of its residents, and everything must start from today.

Conclusion

The return of nutrients to land is a major factor for sustainable agriculture by reducing the usage of natural resources that are not renewable, such as natural gas (used as fertilizer raw material) and minerals. In order to boost agricultural production, food sustainability and livelihoods, they need further funding and this solution overall requires strengthened, taking sustainable methods that use technologies to save energy and build on their own experience of the advantages of sustainable farming. Sustainable agriculture as an approach to food production that combines agriculture's economic, social and environmental dimensions. The agricultural societies in Asia and Africa have effectively followed these values. The number of data - available data, as well as academic analyzes from the program, show that sustainability can be effective in increasing output, income and food security, promoting soil and water conservation, biodiversity and plant health; increasing disaster resilience and climate change; reducing emissions of greenhouse gases.

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