

# Green Entrepreneurship in the Agriculture Industry

Subjects: **Business**

Contributor: Altaf Hussain Samo , Marco Savastano , Nisar Ahmed Channa , Carlo Amendola

Agriculture is one of those industries that is contributing significantly to environmental degradation. Globally, the agriculture industry causes soil erosion, pollutes lakes, rivers, sea, and ground water, pollutes the top layer of earth through the excess amount of chemical in the form of fertilizer, and causes the extinction of living species.

Academic research suggests that one of the solutions to environmental degradation caused by the agriculture industry is promoting green agriculture enterprises and integrating agriculture with advanced sophisticated sustainable technology through green agriculture entrepreneurship. Green agriculture allows the achievement of established threshold sustainable criteria while advancing rural communities with regard to food, energy, and technological independence.

green entrepreneurship

agriculture 4.0

environmental management

developing countries

small medium enterprises

SMEs

innovation

## 1. Introduction

Together with the COVID-19 pandemic, climate change is one of the major issues the world is currently facing that causes serious environmental problems ranging from droughts and floods to extreme temperatures, consequently having large and negative effects on the global economy. These effects are even more evident when considering the agriculture sector, especially in developing countries <sup>[1]</sup>. Globally, the agriculture sector is regarded as a backbone of socio-economic growth and prosperity. According to World Bank data, in the year 2018, the agriculture sector contributed 4% of the world's gross domestic product (GDP) <sup>[2]</sup>. In some developing countries, the contribution of the agriculture sector to GDP is over 25%. At the EU level, the European Green Deal places great importance on the role of digitalization for ecological transition and sustainable growth. Accordingly, the European Commission asks member states to take advantage of the potential of the digitalization process based on new technologies in agriculture, aiming at improving the sustainability and competitiveness of the sector, while enhancing the conditions of farmers by simplifying their daily work. This is essential to achieve the objectives set by the current and future common agricultural policy (CAP) (<https://www.fao.org/family-farming/detail/en/c/381469/>) (accessed on 30 January 2022). As reported by International Trade Administration data, Italy is regarded as one of the largest producers of agriculture in the European Union region. The agriculture sector of Italy contributes 2% of the country's total GDP and provides employment to 4% of the total working population. According to the 2021 report of the Italian Smart AgriFood Observatory, in Italy the so-called *Agriculture 4.0* reached a value of EUR 540 million in 2020 (about 4% of the global market), registering a growth of 20% compared to the previous year. This

type of agriculture is based on the prevalent use of data analytics systems, platforms, or processing software and the Internet of Things, and are applied in the phases of cultivation, sowing and harvesting of products in various sectors, including fruit and vegetables, wine, and cereal. Similarly, in a developing country such as Pakistan, this industry sector ensures the country's food security, and is key to alleviating poverty and generating employment, particularly in rural areas. This sector alone contributes 19.2% to the country's GDP and provides direct and indirect employment opportunities to approximately 38.5% of the workforce [3]. In recent years, the growth of agriculture has been severely affected globally for obvious reasons like climatic change, water shortages, increases in prices of input, and, most importantly, the limited use of modern technology. Due to these issues, the agriculture growth rate over the last 5 years has fluctuated. In the last 5 financial years, the agriculture growth rate was on average about 2.5%, suggesting a limited agri-based entrepreneurial activity and innovation [3]. This statistical evidence calls for research and policy-making to foster the growth of this fundamental industry, especially for developing countries like Pakistan.

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The importance of green entrepreneurship in environmental sustainability has widely been accepted by scholars and policy makers in both developed and developing nations [7]. In this research domain, Menon and Menon [8] suggest that large companies integrate ideas relative to environmentalism into their overall management and marketing practices to get a competitive advantage and exploit new market opportunities. According to OECD [9][10], small and medium enterprises (SMEs) play an essential role in green growth as the main drivers of green entrepreneurship and key players in emerging eco-friendly industries. More prominently, both directions given by the sustainable development (SD) goals set by the United Nations (UN) and the effects of economic restructuring after the COVID-19 pandemic have formed a new business landscape. A number of governments around the globe have also announced programs and plans that put green entrepreneurship at the top of their economic policy agenda [11][12]. New policies and strategies have been formed to promote green growth and facilitate advanced technological innovations that can mitigate the impact of humans on natural environment and address global climatic issues [13]. Therefore, identifying factors (both internal and external) that affect and/or influence green entrepreneurship in agriculture will inform policy to boost its growth.

## **2. Green Entrepreneurship**

Green entrepreneurship combines technological advancements with profit orientation to alleviate the environmental footprints of human activities on the natural environment, and to address environmental issues like degradation of

soil [14], change in climate, and losses related to biodiversity [15]. A number of studies have reported that green entrepreneurship could be a driving force to restructure the economy for emerging economies [16]. However, there is disagreement among scholars on the concept and definition of green entrepreneurship. Academic literature offers a variety of terms and different meanings for the concept of green entrepreneurship, such as pro-environmental, green, sustainable, ecological, sustainable entrepreneurship, eco-preneurship, and eco-entrepreneurship. Normally, green entrepreneurship can be categorized into two categories: (1) in established firms where environmental management practices exist or where cleaner production processes are being adopted, and (2) newly established business startups focusing on ecology or natural resources [17]. The first category could be comprised of business entities focusing on adaptation of pro-environmental business practices to create innovations and to gain a competitive edge [18]. Prior academic studies conducted in green businesses domain suggest the effects of environmental management practices on competitive advantage in context of environmental management systems, and corporate social responsibility [19][20][21].

According to Menguc and Ozanne [22], green organizations acquire valuable intangible green resources that other companies cannot. In line with that, Menon and Menon [8] argued that large organizations align innovative environmental ideas with their organizational practices to place themselves in a better competitive position in the market. Based on green business management strategies, Pastakia [23] defined green entrepreneurship as an individual and institutional attempt to popularize their eco-friendly practices through market or non-market routes. Consistent with this argument, green entrepreneurship can be defined as the strategy through which an established business implements eco-friendly practices to differentiate its products, or innovates production processes through green practices to gain competitive advantage [17].

The second category of green entrepreneurship includes businesses organizations that use organic raw materials in the form of natural resources to develop products and services to prevent environmental pollution and degradation [17]. In a given context, Lober [24] defined green entrepreneurship as “the creation of new products, services or organisations to meet market opportunities” (p. 26) and argued that pollution prevention strategies used by organized businesses should be the motive for corporate self-renewal. Cohen and Winn [25] defined sustainable entrepreneurship as “the examination of how opportunities to bring into existence future goods and services are discovered, created, and exploited, by whom, and with what economic, psychological, social and environmental consequences” (p. 35). Consistent with this, green entrepreneurship can be defined as a new business startup focusing on the environmental services sector [17].

### **3. Green Entrepreneurship and Social Economic Prosperity**

Entrepreneurship is a complex social phenomenon, with particular dynamics, approached from multiple perspectives, encompassing the processes behind the creation of ideas, companies, and patents [26][27][28]. It is regarded by various authors as a key component to the socio-economic development of a country as it enhances productivity, innovation, employment, and economic expansion [29][30]. The entrepreneurship research of the last 25 years is mainly polarized on two main aspects: the determinants that encourage entrepreneurial activity, studied

especially in organizational, psychological, economic and institutional domains, and the effects of new business creation, usually explored through institutional or economic frameworks [31].

Although no consensus is found among researchers on the definition of entrepreneurship, Medeiros et al. ([32], p. 3) reported that entrepreneur is “an individual who makes decisions under the conditions of uncertainty and emphasizes the distinction between risk and uncertainty”. According to Global Entrepreneurship Monitor, entrepreneurship is regarded as an attempt to develop new business ventures or initiatives like self-employment, expansion of existing business, or new business enterprise [33]. Academic research has also suggested the importance of entrepreneurship in enhancing economic development and having an impact on the environmental performance of countries [11].

Recently, the issue of global warming and environmental degradation has emerged as one of the most severe crises humankind has ever faced [19][21][34]. As a result, policy makers across developed and developing countries are emphasizing strategies for mitigating the harmful impacts of business activities on the environment [19]. In response to these calls for environmentally sustainable business practices, scholars have introduced the concept of green entrepreneurship. The impacts of COVID-19 and globalization paved the way for economic restructuring and formed a new business landscape. In consequence, various Western governments have put green entrepreneurship on top of their agenda and announced initiatives to foster green entrepreneurship to develop new jobs and foster economic growth [35]. This importance of green entrepreneurship turned policy makers toward green entrepreneurship to stimulate growth through job creation, and toward environmental sustainability through promoting green products and services. As a result, over the last decade, policy makers around the globe, particularly in developing countries, have been making efforts to promote green entrepreneurship.

Apart from the impact of entrepreneurship on outcomes like economic growth and economic development, the social and environmental impact of entrepreneurship on society and particularly on marginalized communities and cultures where discriminatory practices exist cannot be ignored [36][37][38]. Entrepreneurship is regarded globally as a vital source of economic growth and a prominent factor influencing the socio-economic well-being of society [7][39]. Similarly, scholars considered entrepreneurship as an essential source of societal development, job creation, poverty alleviation, innovation, and economic competitiveness. It is argued by scholars that the role of entrepreneurship in economic development and empowerment of women is very important [39][40][41]. As the majority of the female population facing discrimination and empowerment-related issues are residing in rural areas where agriculture is the only source of income, engaging the female population in green agricultural entrepreneurship can thus be a source of women empowerment and the socio-economic development and well-being of under-privileged societies [33][36][42].

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