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An Overview on Agriculture Management

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ABSTRACT
Agriculture has been performed as a life-sustaining activity in every nation in the globe from ancient times, when other development sectors did not even exist. In the case of India, it was a net importer of food grains in the early 1960s before becoming an exporter of a variety of agricultural goods. Marketing and development have become buzzwords in the agricultural sector as a consequence of globalization's impacts; biotechnology, precision farming, and the employment of different highly automated methods have also contributed to a paradigm shift in the area of agriculture. Aside from the government's exclusive emphasis on privatization, farmer organizations, public-private partnerships, and entrepreneurs have all turned their attention to agricultural development. Furthermore, the participation of erudite people has been critical in attaining progress in the agricultural industry. The agricultural situation has improved with the introduction of chemical manures, new and better plant varieties, and reduced reliance on climatic conditions owing to technical progress. As a consequence, agriculture has evolved into a synthesis of science, business, and commerce.

Keywords
Agriculture, Crop, Farmer, Harvest, Management, Soil.

1. INTRODUCTION
Agriculture management refers to the many management methods and procedures that are used to maintain agriculture active, efficient, and lucrative. Agriculture management is often thought of in terms of big agricultural farms, however similar methods may be effectively applied to small cultivable land as well. In many respects, efficient farm management is comparable to management methods employed in any business. There are activities that must be done on a regular basis, as well as protocols that everyone involved in the process must follow. Participants must report to supervisors or administrators, who, in turn, must report to their owners. The types of duties that need be done on a daily basis and the degree of management necessary in this operation distinguish farm management from other money-making enterprises. This process may vary even across distinct yield farms depending on the kind of agricultural business engaged and the overall size of operation. For example, the fundamental actions required for effective dairy product management may be quite different from those required for the operation of a barley farm [1, 2].

Large corporations, on the whole, prefer new technology to increase the efficiency of their management processes. A number of management tasks may be automated with the use of special software that tracks units produced, outstanding expenses, units in progress, and awaiting orders. Additionally, this software aids in the administration of cutting-edge equipment for planting, processing, and maintenance, as well as helping farms of all sizes improve their output. Small-scale farmers may benefit from management guidance as well. Consulting with an agricultural manager allows consultants to assess the current condition of the farm and provide helpful suggestions for increasing output and profit margins.

Managers assigned to a particular organization/land will supervise the implementation of suggestions, while educating family members and hired employees how to make the most of the improvements.

Field training, like many other professional paths, typically involves a combination of formal study in a university or university degree program and job experience. Before earning their professional credentials, students in any degree program may work as interns on commercial farms. Farmers may, however, acquire fundamental management skills using resources accessible from various agricultural organizations and agencies for a long period. Many reputable institutions in India, such as the Indian Institute of Management (IIM) Ahmedabad and others, are now offering courses in agriculture management, which has a positive impact on society by encouraging people to think of agriculture as a science and a business with great commercialization potential[3, 4].

2. LITERATUREREVIEW
B. Mishra et al. conducted a field experimentduring the 2015 rabiseason at the Vegetable Research Centre of G.B. Pant University of Agriculture and Technology, Pantnagar, to assess the effect of various numbers of fungicidal sprays of a standard fungicide Difenoconazole 25EC for the management of Stemphylium blight of onion caused by Stemphyliumvesicarium (Waller.) Simmons. The experiment was set up in RBD, and three replications of each treatment were examined beginning from 15 and 30 days after transplanting up to 90 days after transplanting with various numbers of foliar difenoconazole sprays, viz. 3, 4, 5, and 6. The experiment found that 5 foliar sprays were the most successful, with a disease control rate of 23.37 percent, followed by 6 sprays. The treatment with 5 sprays also produced the greatest marketable bulb yield (22.82 t ha-1). The economic analysis of treatments showed that 5 sprays provided the greatest net return owing to treatment (R68,400 ha-1) and the highest percent preventable loss (29.97%), as well as the highest net benefit-cost (B:C) ratio of 5.64. In the tarai area of Uttarakhand, 5 sprays of Difenoconazole 25EC at a rate of 125 g.a.i. ha-1 were shown to be the most successful and cost-effective management approach against Stemphylium blight of onion [5].

K. Ambanket al. discussed the majority of tropical peatland is located in Southeast Asia, where it covers about 20 million hectares and is mostly centered in Malaysia's and Indonesia's Sunda Flat. It's part of a vital rain forest ecosystem that's both delicate and vulnerable. Some of these regions were unavoidably transformed to agricultural, industrial, and settlement locations as a result of enormous human growth. The use of peatland for agriculture has a number of drawbacks. Progressive draining is required for agricultural peatland development. However, when peat is drained, it shrinks and sinks, making it difficult to maintain its use in the long term. As a result, appropriate management techniques must be developed and implemented in order to maintain its

use for agriculture. This article discusses some of the most significant crop cultivation management techniques on tropical peatland, with a focus on the Malaysian experience [4].

3. AGRICULTURE MANAGEMENT

The current study was based on thorough research and analysis of the elements that go into creating a sustainable farm that is also lucrative. This paper discusses many elements of agricultural management that must be addressed in order to have a successful and balanced farm. This research was carried out with the use of internet resources. Numerous data was collected from various sources throughout the study, including research papers, journal articles, webpage-based material, book chapters, government reports, and other information relating to agricultural management or a related subject.

3.1. Crop Security

Crop protection encompasses all functional aspects such as pest management, disease control, and plant control by addressing the following: microorganism-caused plant diseases, animal pest control, evaluation of pest or disease-damaged crops, epidemiology of pests and diseases, development of toxins in crops, effect of bio-rational pesticides on plant growth regulators, and development of admixture methods.

Weeds are plants that grow alongside crops and are unwanted. These unwelcome plants deplete crops of nutrients, sunlight, water, and other resources, affecting their development, resulting in undernourished crops and lower yields. Farmers use a technique known as weeding to eliminate these weeds in order to protect crop production. Amaranths, Cyperinusrotundus, Bermuda grass, and other weeds are examples. A recent study on crop protection found that an effective crop protection plan requires a machine-centric approach. Crop security is a component of a development strategy that extends from farmers to international supply networks. To avoid unfavorable side effects, the consequences must be weighed against all of the common agricultural policy's objectives (CAP). A stringent regulation, for example, may limit the use of chemical Public–private partnerships (PPPs), lower yields, and result in land conversion to agriculture.

Producers would not be the only ones to bear the extra expenses of less hazardous activities in the future. Farmers may choose the most cost-effective methods for passing on increased costs to suppliers and customers. Furthermore, as one of the CAP's objectives, policies must provide a reasonable income for farmers. Foreign trade also presents a danger. Phytosanitary regulation stipulates that no live species be detected in plant or plant-product exports, restricting crop defense options. As a result, environmental and trade regulations must be adjusted to ensure that agricultural product providers are not disadvantaged. This would be in direct opposition to the CAP's objectives, which are to simply transfer environmental damage[6].

3.2. Fertility and Soil Management

Soil is the foundation of life on our green planet and a key component of the earth's vital zone. Provides necessary nutrients for food production, biodiversity, plant development, animal protection, carbon sequestration, and environmental sustainability. Now that it has been shown that soil is the primary source of terrestrial carbon and a significant contributor to greenhouse gas emissions, a positive start toward addressing the climate issue may be taken by implementing sustainable land management practices. Increasing the amounts of organic carbon and humidity in the soil is one approach, especially for carbon resistive plants (biochar application). In general, soil quality is largely determined by farmer behavior, as well as other influencing factors such as increased modernization, which may deplete the upper fertile layer of the soil and adulterate it with unfair components such as industrial chemicals, cement, and plastics, affecting soil reproducibility significantly[7,8].

3.3. Resource management that is sustainable

With the current rate of global population growth, more initiative and ingenuity will be required to achieve a sustainable increase in productivity, strengthen the global food supply chain, reduce food waste, and ensure that all those suffering from hunger and malnutrition have access to nutritious food. Many global leaders reiterated the right of everyone to have access to good and nutritious food during the Rio+20 summit on sustainable development in 2012, in accordance with the right to sufficient food and the universal right to be free from hunger. The United Nations Secretary-'zero General's hunger challenge' was launched in 2012 during the Rio+20 summit, and it called for governments, civil society, religious groups, the business sector, and academic institutions to mobilize in order to eliminate hunger and eradicate all forms of malnutrition. Ending hunger, ensuring food security, good health and well-being, promoting sustainable agriculture, and recognizing interconnections between supporting sustainable agriculture, promoting gender equality, addressing climate change, empowering smallholder farmers, ending rural poverty, and ensuring healthy lifestyles were all addressed by the United Nations General Assembly in 2015.

3.4. Energy Savings

Agriculture is one of the most significant aspects of global economic management. Agriculture requires energy at many stages, including the manufacturing and application of pesticides, as well as the fueling of tractors that sow seeds, harvesting crops, and the requirement for power for animal housing. Farmers have been vulnerable to high energy costs and unexpected energy demand instability as a result of this huge energy need. It has also had an impact on fertilizer prices. Energy efficient regulations, if implemented correctly, can assist agricultural producers in conserving energy without compromising output. Effective policies may aid in the achievement of the goal by providing instruction on high-efficiency energy technologies, which will enable farmers to enhance their operations.

3.5. Pollution Prevention

Agriculture waste management requires careful attention in order to transform trash into usable products while also avoiding contamination. For example, stubble burning by farmers is recognized to be one of the major sources of poor air quality and pollution in many Asian nations prior to the winter season. Apart from the potential dangers of chemicals/pesticides used in agriculture, other industrial waste may also harm the ecosystem. Animal husbandry, for example, may release hazardous pollutants into the environment. Agricultural wastes comprise all types of excesses, crop leftovers, and processing wastes from raw agricultural goods such as vegetables, fruits, fish, goat, meat, chicken, and dairy products. A smart waste management strategy involves the skilled processing of all kinds of waste products generated by any agricultural business. The competent management guarantees that farm work complies with all safety requirements for farm waste disposal and

provides all necessary equipment and containers to properly store waste until ultimate settlement. As a result, it is essential to properly dispose of all of these wastes in order to prevent any negative consequences[9,10].

3.6. Animal Husbandry

The importance of livestock in India's economy cannot be overstated. Animal husbandry is deeply entrenched in Indian culture and civilization. Livestock are a great source of animal protein and are in high demand. Many firms have been engaged in these industries for years, offering a range of livestocks such as apiculture, sericulture, and pisciculture to meet this nutritional need. Indigenous stocks are more virus-resistant and more able to adapt to climate change than non-indigenous stocks. They protect against crop failure and unexpected financial losses. Yaks, camels, pigs, horses, sheep, and goats are among the many animal options offered in India. However, technical laggardism, a lack of veterinary services, and budgetary limitations are only a few of the problems that stymie development in this field.

3.7. Marketing

In India, agriculture is the most important activity. A large portion of India's population still lives in rural regions, where agriculture and related businesses are the major source of income. However, despite the government's many efforts, there is still a gap between the farmer's investment and the return on that investment. As a result, a lack of facilities, prices, transportation, and uneven practices have an impact on farmers' attitudes about agricultural marketing. Agricultural marketing is a process that begins with the decision to produce a commercial agricultural commodity and includes various aspects of market structure, both financial and institutional, as well as assembling, grading, storage, transport, and distribution based on technical and economic considerations (also includes pre- and post-harvest operations). The production and marketing strategies for agricultural products are intertwined in such a manner that various schemes and resources are brought together to explore joint efforts for the benefit of farmers. Many government strategies are geared toward this, such as in India, where the 'National Institute of Agriculture Extension Management,' an autonomous institution under the Ministry of Agriculture, works on this platform to assist farmers by formulating basic marketing guidelines in a step-by-step manner.

In order to combine marketing strategies, collaboration between the agricultural department and the marketing department of the government organization should occur as a first step. Because the marketing plan may be developed in line with the district's production trend, including it in the policies has the ability to substantially improve the marketing department's preparation operation. This approach would also be extremely helpful and practical for the marketing department in connecting the production of different agricultural goods at the district level to the right market. The district's core team will be made up of agencies operating in agriculture, animal husbandry, sericulture, horticulture, dairy development, marketing, soil conservation, fisheries, irrigation, forest, and other non-government organizations (NGO) in the district. The district's core team would consist of scientists from agricultural universities, KrishiVigyan Kendra and zonal research stations, as well as NGOs operating in the area. This core staff must be educated on a variety of marketing topics for which forms and timetables have been created. The team should educate people about the district's marketing methods, such as controlled marketing and contract farming, direct selling, retail chain convergence, agricultural produce production, processing, and export, and so on. The sample farmers who will give information on different types of agricultural marketing, such as contract farming, direct marketing, futures markets, and so on, will be selected as part of the data collecting activity. The information must be gathered using the schedules (Part-I) and formats (Part-II) created by different stakeholders on various topics. The schedules will assist in detecting structural loopholes and the reasons of such gaps. This will also help with future planning for different sub-components of a district's marketing strategy. In the final drafts that will be utilized in the database, the gaps and solutions must be recorded in the appropriate columns. The results of this study should be utilized to design a big marketing scenario for the area, taking into account the production trend and crop diversification, with a focus on the future prospects.

3.8. Management of Wildlife and The Environment

Integrated landscape management approaches are gaining fresh traction as scientists, policymakers, and local people recognize the need of increasing the multi-functionality of agricultural landscapes for food production, improved livelihoods, and ecosystem preservation. Because eradicating forests and converting land use is not a one-day objective, the whole ecosystem cannot be disrupted for the sake of the human species. Finally, these alterations would have negative consequences for the whole human race, in the form of severe climate shifts induced by the disruption of the entire ecosystem. There is a growing and frequent competition connection between biodiversity, economic development problems, ecosystem protection, and agriculture, as shown by many global nations' plans and programs, including Latin America and others. As a consequence, new techniques are being tried in various areas of the globe to systematically identify the characteristics, outcomes, and flaws for wildlife and landscape management.

4. DISCUSSION

The majority of human needs and requirements are met by agricultural products. As a result, agriculture has evolved into a large business that requires careful planning and organization in order to meet society's growing demand. This includes proper coverage of the farmer's produce, as well as protection from the multiple advertising factors that are involved until the harvest is sold. This area of agricultural management takes a comprehensive approach to risk management, taking into account interactions between all risk sources, regulations, and farmer tactics. In Canada, policy analysis is organized around three layers of risk that each require a different policy response: common or frequent risks that farmers should manage, marketable intermediate risks that can be transferred through market tools, and catastrophic risks that necessitate government intervention. In the Indian setting, NitiAayog acknowledges a wide range of agricultural hazards. Technology risk, for example, production risk, institutional risk, pricing and market risk, personal risk, and financial and credit risk are all examples of risk.

The Global Development Report (World Bank 2001) defines solutions as "agreements impacting people, families, or groups such as societies or settlements." Indian risk

management methods are based on this definition. It has also been described as ex anti and ex post designations, which are based on the moment at which the risk response occurs: ex anti is before the occurrence of a potentially harmful event, while ex post is after the occurrence of the incident. This is also helpful for demonstrating the distinctions between risk-sharing and on-farm methods in ex anti responses.

The diversification of sources of income and the choice of agricultural development methods differentiate ex anti-informal measures. Simply avoiding risk is one strategy that manufacturers may use. Extreme poverty puts people at danger in some circumstances, therefore they avoid risky actions that might lead to greater income. Crop-sharing agreements for land rental and labor hiring can provide an efficient method for people to share risks, lowering producer risk. Community-level risk pooling, which occurs in individual groups or enlarged households where individuals of the population transfer services to one another to balance marginal utilities, is another risk-sharing mechanism. Such structures are helpful for balancing the impacts of events that affect specific people, but they are incapable of evaluating income situations generated by covariate shocks.

Selling assets such as cattle, reallocating labor capital with off-farm enterprises, delayed important family responsibilities, reduced patterns of usage, and migration are all examples of informal ex post income smoothing techniques. South Indian farmers have been demonstrated in studies to be able to transition quickly from complete farm work to mostly off-farm activities if monsoon rainfall is expected to be minimal. Several studies performed in India clearly show that the risk factor is linked with significant production loss due to a lack of appropriate specialization. In other words, farmers may be able to trade their fluctuating revenue for a fair profit.

A systemic approach is used in agricultural management plan to address connections between all sources, hazards, farmer tactics, and policies. The policy analysis is based on three levels of risk: regular risks, intermediate risks, and catastrophic risks, each of which requires a different policy response. Agriculture management encompasses the idea of appropriate layer balance as well as the evaluation of all potential variables influencing agriculture and its yield. Because it is difficult for a farmer to evaluate all of the variables, the necessity for a "Agriculture Manager" emerges. Plantations, greenhouses, nurseries, and other agricultural processing facilities are managed and overseen by agricultural managers. Farmers, in general, are often recruited and trained to look after agricultural products under their specialized supervision.

Agricultural managers are in charge of overseeing all aspects of running vegetable-growing fields and other plants. Preparation, monitoring, and sometimes involvement in the planting, fertilization, or harvesting process are among the other duties. They may hire, train, and supervise agricultural workers to ensure that they are well-prepared for their critical roles. An agricultural manager is responsible for overseeing and implementing a variety of activities on plantations, nurseries, greenhouses, and other agricultural production facilities. They also handle the farm's finances, provide assistance, and choose appropriate agricultural equipment. This function is very important for the country's food supply to be preserved. Many of them work for themselves and are involved in various areas of farm management. Others who operate on big industrial farms may put together and head a team to do their specific duties. While educational credentials are not required, degrees in agricultural sciences, botany, or other related areas such as biotechnology are becoming industry requirements for hiring them for their agricultural scientific knowledge and experience.

5. CONCLUSION

Agribusiness management is a discipline that combines economics, agriculture, commerce, business administration, and other management concepts into one subject. Attention is needed from the very beginning of a well-managed agribusiness, from seed planting through receiving the real reward in the form of sufficient market value of the crop. These problems may be handled effectively via agricultural management education, which has the potential to unleash a second wave of agricultural revolution. This strengthens the position and duties of a ‘agricultural manager,' particularly in developing nations like India, where the economy is dependent on agriculture and therefore referred to as an agrarian economy. These managers not only provide their expert advice based on current technology and accessible data, but they also handle all of the paperwork, which may be a difficult job for an illiterate farmer. They are familiar with government programs, assistance, and benefits for farmers, and as a result, they provide agriculture with a fresh dimension that has never been explored before. In recent years, the majority of global nations have hired agricultural managers to supervise all elements of operating farm lands and other facilities in order to produce crops and assist agriculture with their specialist expertise. On the one hand, it benefits agriculture, while on the other, it provides profitable possibilities for the new generation by offering appropriate work. As a consequence, it's a stance that benefits a nation like India, where more than 40% of the population relies on agriculture for jobs.

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