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Original Paper

Development of Quality Agriculture Practices as a Pillar of Sustainable Agro-Production for Fighting Against Hunger

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Abstract

Our main concern is agriculture production. The high-quality productions are absent due to some technical issues. The standards criteria for inspections are prepared to help each production grow. It aims to reduce adverse impacts on both the environment and human health. Safeguard the environment and preserve healthy agricultural produce; all depend heavily on agricultural practices. The soil, water, disease, pests, and climate change are important elements for agricultural practices. Attributes of natural cycles developed to maintain biological variety are preserved by sustainable agriculture. The sustainable farming practices are the research question to ask farmers. The responses are crop cycle 8.90%, crop diversity 12.83%, protecting crops/seed 12.57%, integrating paste management 10.73%, attracting beneficial organisms 12.30%, soil fertility 14.92%, animal grazing 15.71%, and water management 12.04%, respectively. This is important to analyze. Similarly, techniques like crop rotation, conservation tillage, and pasture-based animal husbandry are the cornerstones of sustainable agriculture. It does not rely on activities that harm soil, water, or other natural resources. Using excessive fertilizer, hazardous pesticides, or genetically engineered seeds is very serious. It includes raising animals, producing food and vegetables. In addition is providing wholesome food for families and communities, farmers that employ sustainable agriculture practices preserve water, soil, and seeds. The sustainable farming process produces healthy food without harming future generations' ability to use their land in the same way. It produces clean, fresh, nutritious products and increases the market to improve the economic condition of farmers.

Keywords

Pillar, agriculture, hunger, agriculture quality, local seeds, crush culture, hybrid

1. Introduction

We are focusing on how to produce healthy agricultural production. They are missing points for quality production that were identified. The standard inspection guidelines are prepared. An agricultural product is quality market. This is a kind of standard methodology necessary to changeable according to time and needs. An effort is made to minimize the negative effects on human health and the environment. Good agricultural practices play an indispensable role in maintaining healthy agricultural produce, sustaining human health, and protecting the environment. Adopting the practice, it covers aspects of soil, water, disease, pest and climate change management, socio-economic concerns, production cost, price, income, and sustainable business development. Good agricultural practice is a type of agricultural production system.

Sustainability agriculture is using to assess the food and agriculture organizations. Sustainable development goal indicator 2.4.1, which is assesses the proportion of agricultural area under productive and sustainable agriculture (FAO, 2023).

Increased access to local fresh produce is occurred concurrently with an uptick in on-farm pathogenic contamination and subsequent food-borne illness outbreaks (F. Bhuiya, 2008). Fresh product including those sold at farmers' markets, can result in transmission of pathogens, resulting in approximately 46% of yearly food-borne illnesses, and leafy greens are the most common fresh produce type to be linked to such illnesses (C. Braden & F. Angulo, 2013).

Good Agriculture Practice (GAP) was first started in Europe since in 1997. Similarly, it follows GAP from 2003. Global GAP came to SAARC in 2014; it came to know as GAP. Although there was work on good agricultural practices in Nepal since its guidelines were issued in 5 October 2018. In the same date is considered the official date of GAP. Global Gap has implemented at the international level. The countries, Asia and Nepal's neighboring countries, China and India, are also implementing their national agricultural practice standards based on needs and production disruptions. For example, China, Japan, Indonesia, etc. are taken as good agriculture practices. Since there is a huge demand for quality agricultural produce produced by adopting this standard in the international market, the ITO countries earn a large amount of money from the export of such agricultural produce. On the other hand, these products are environmentally and human health-friendly; the demand is also increasing in the domestic market. Thus, good agricultural practices are increasing to competitiveness of agricultural products and also contributing to sustainable agriculture.

Good Agricultural Practice (GAP) and organic agricultural cultivation methods are commonly recommended for farmers to ensure the food safety, profitability, and sustainable production of crops (Gehlot P. Singh, 2018). Manufacturers began to focus on more mechanized and knowledge-intensive production which allowed them to produce standardized products in the shortest possible time with minimal use of human labor (Khanal, Uttam, 2022).

It is agree that the agriculture production increase by the help of good agricultural practices and uses of technology. All of the Nepali people are agreeing to do agriculture activity in living life. In the analysis of socioeconomic status, 62% of Nepali Tharus' were engaged in agriculture but their economic condition is also poor (Khanal, Uttam, 2021).

Realizing the need for good agricultural practices is to provide healthy and safe food. Agricultural products are domestic and foreign consumers to use. It has contributed to sustainable agriculture to promote and exports/imports management. The Nepal national agricultural policy 2004, the agribusiness promotion policy 2006, and the united nations food and agriculture organization rule (21) of the plant protection regulations, 2009, and rule 33(a) of the food regulations, 2027, based on the good agricultural practices prepared by the organization for the SAARC region. The government of Nepal is using the given authority by the ministry of agriculture and livestock development has prepared the Nepal good agricultural practices implementation guide 2018. There are five modules under the good agricultural practices standards of Nepal. They are food hygiene module, environmental management module, product quality module, workers' health, safety module, and general requirements module.

Agriculture that is done for the long-term health of people and land is sustainable agriculture. This includes the production of food and vegetables and animal husbandry using agricultural techniques that are conducive to the environment, health, and human and animal welfare. Farmers who use sustainable agricultural systems meet the needs of families and communities for nutritious food and also conserve water, soil, and seeds for the future. It solves problems like hunger, migration, degradation of good soil, water pollution, etc. The sustainable farming process produces healthy food (maintaining the fertility of the land) without harming future generation's ability to produce food from their land in the same way. Sustainable agricultural products produce clean, fresh, nutritious agricultural products and increase the market, and agricultural products get better prices and improve the economic condition of farmers. Sustainable agriculture practice inspires good practices in agricultural work. It also helps in managing soil sustainability for food security. In this way, agricultural work can be made qualitative.

This paper will not solve all the problems that were seen in sustainable agriculture development. It investigates the dimensions of good agricultural practices for managing sustainable farming in agriculture. The research question of the study was: What are the best agricultural practices in sustainable agriculture development and how have they contributed to local seed choice? The purpose of this study is to analyze the best practices for quality agriculture practices in Nepal. The specific objectives were to identify good practices for sustainable agriculture development, cultivate the highest selection of local seeds, and analyze the importance of agro-product production in fighting against hunger.

2. Review of Literature

Food is produced without use of excessive chemicals under organic farming. The objective of both organic and sustainable farming is to practice ecologically practical agriculture, but in both methods it is measured by different criteria. Organic production, especially on an industrial scale, also affects the environment. It harms human health in various ways. Due to the prevalence of single cropping systems, the natural cycle is destroyed, the nutrients and biological elements of the soil are reduced, the environment continues to be polluted, and an excessive amount of friendly organisms are destroyed. Therefore, sustainable farming is better than organic farming.

Malthus says that the population grows while the supply of natural resources remains constant. Productivity in agriculture tends to decline. This results in a situation in which agricultural production is unable to keep up with the growing population, while the reduction in supply is followed by famine. Though fitting the realities of the industrial revolution, the Malthusian theory was quickly met with strong criticism. The primary failure of the Malthusian approach was to miss technological progress enabling food production growth without the need to acquire new land resources. This issue was addressed by Boserup, who found that food production, thanks to innovations and technological progress, was growing faster than the population size (this pattern is referred to as the Boserupian model), thus preventing the Malthusian catastrophe (Boserup, E., 1981).

The agro-product will increase in the in the coming future for saving lives. If it wills com problems, we can't do anything for you. According to the UN, there will be nine billion people on an animal protein-rich diet in 2050. It takes 1,500 liters of water to produce a kg of cereal and 15,000 to produce one kg of meat. Healthier diets will help reduce the pressure on our natural resources and respond to the problem of obesity, which is a growing concern around the world. But producing enough food to feed the world does not guarantee food security. Hunger exists today, although there is enough food for all. Even if we increase agricultural output by 60 percent by 2050, we will still have 300 million people going hungry due to a lack of proper access to food. Access is central to hunger. Most often, the reason people are undernourished is because they cannot grow enough food for themselves or do not have enough money to buy it (UN, 2019).

The "Enough" campaign primarily aims to ensure children's nutrition by supporting the programs and efforts of the Nepalese government to end child hunger and malnutrition. She said that this campaign will help to fulfill the country's commitment to achieving sustainable development goals and national priorities such as the multi-sectoral nutrition plan, the third and 16th periodic plans to achieve it. World Vision International Nepal has also committed to support the government with 1.7 million US dollars for the campaign. This campaign was announced by the General Assembly of the United Nations on 22th September 2023, with the intention of ensuring the right to food and nutrition of children who are starving and malnourished in different countries of the world. According to experts, 1 person in every 8 households has to face food insecurity, and due to a lack of healthy diet, 1 in every 4 children has not

been able to grow to their full potential, both brain and body (World Vision International, 2024).

Nepal is currently on the list of countries with moderate hunger. In South Asia, Sri Lanka, Nepal, and Bangladesh are on the list of countries with moderate hunger. India, Pakistan, and Afghanistan are countries with severe hunger. Last year (year 2022), Nepal was ranked 81st in the World Hunger Index (GHI), but this year (year 2023) it has improved. According to the report, this year, Nepal has climbed 11 places higher than last year and is ranked 69th. A total of 125 countries have been indexed in the report. Nepal's score is 15, and it is mentioned in the report that it has a moderate level of hunger. Among other South Asian countries, Sri Lanka is faring better than Nepal. Sri Lanka is ranked 60th. Similarly, Bangladesh is at the 81st position, Pakistan at the 102nd position, India at the 111th position, and Afghanistan at the 114th position. Two organizations named "Concern Worldwide" in Ireland and Germany to prepare and published the report (BBC, 2023).

Agriculture development has embraced several approaches. For example, green revolution initiatives in 1950 resulted in the adoption of new technologies, chemical fertilizers, and other agrochemicals. In 1962, following the publication of the book Silent Spring, authored by Rachel Carson, there was increased awareness about the adverse effects on humans and the environment caused by the indiscriminate use of pesticides (D.A. John, G.R. Babu, 2021).

In all these approaches, Good Agricultural Practices (GAP) have an essential role in ensuring the triple wins of sustainability, including maximizing social, economic, and environmental benefits and impacts of agriculture now and in the future. The vital approaches to sustainable agriculture are agro-ecology, inclusive nature agriculture, perma-culture, conservation agriculture, regenerative agriculture, carbon farming, low external input agriculture, organic farming, high nature value farming, climate-smart agriculture, ecological intensification, circular agriculture, biodynamic agriculture, and sustainable intensification (B.P. Oberc, 2020).

Codes developed to address product safety and quality tend to focus on the impact of production practices on the end-product, less on the impact of production practices on the environment, fair employment, or local development. Sustainability indicators and organic or fair trade standards developed by governments, public agencies, or NGOs are likely to be more encompassing towards achieving SARD goals than standards developed by market actors. On the down side, they will often rely on public incentives or support such as government payments, extensions, and technical assistance, which makes them a costly option for developing countries. They may also rely on price premiums based on consumers' willingness to pay for environmental and social sustainability (Sophie Anne, 2004).

The good agriculture practice should have needed healthy, sustainable, and inclusive knowledge. Beside this, food production is critical to achieving the world's development goals. Agricultural development is one of the most powerful tools to end extreme poverty, boost shared prosperity, and feed a projected 10 billion people by 2050. Growth in the agriculture sector is two to four times more effective in raising incomes among the poorest compared to other sectors. Agriculture is also crucial to economic growth,

accounting for 4% of global Gross Domestic Product (GDP), and in some least developing countries, it can account for more than 25% of GDP (WB, 2024).

3. Methods and Materials

Agricultural productivity theories encompass various perspectives on the factors influencing growth in the agricultural sector by quality of agro-practice. This theory include the analysis of total input of production factors that growth to sustainable agriculture productivity. The impact of investments in agricultural productivity was interconnections between agriculture, poverty, and inequality of human life. The Study discuss on about the importance of good agricultural practices enhancing quality productivity for agricultural growth and development. In this study, the details of the works done under the good practices of basic agricultural work have been analyzed. The study has based on the principles of product variation and its quality. So, the study area was Jumla and Dhading located different climate and biodiversity. There were approximately 8700 farmer to known about good agriculture practices and sustainable agriculture development. So, I am going to select two districts by the purpose of the study. I have visited the field at first and identify to agriculture pocket area. I get more information during the time of survey the study field. The primary data are collected by using random sampling methods from study area. The study areas have divided into two clusters. First cluster named Jumla and second cluster named Dhading. From each cluster, they have selected to 191 farmers with pocket area. So, 382 is the total sampling population of study. Here the sample size is not very small. The study is based on published information and data. The remaining information has taken from agro-vet specialist working an expert. The primary data was tabulated as the same issue and themes. It is explained on the basis of tables and percentages by using simple statistical tools. The study has based on qualitative research approach that has used discriptical analysis. So the study will useful as a source of information for other studies in good practices of agriculture.

The sample size of population is identify by using the formula, $n = \frac{N}{(1+N(e)2)}$

Where, n=sample size

N=study population

e=marginal error or confidence interval

The marginal error 5%=the value is 0.05

There were around 8700 farmer had good agriculture practice.

So, $n = \frac{8700}{(1+8700(0.05)2)}$

$= \frac{8700}{(1+8700(0.0025))}$

$$= \frac{8700}{(1+21.75)}$$

$$= \frac{8700}{22.75}$$

= 382.41

= 382

The sampling population is valid for the purpose of study, which is calculated by using the above formula.

4. Sustainable Farming Practices

Good practices are essential in agriculture. It helps to practices sustainable farming systems. It helps to make full use of natural resources by putting environmental protection at the center. By this, biological organisms are protected and food elements develop in the soil. The ability to use natural objects in nature is also developed.

The term “sustainable agriculture” (U.S. Code Title 7, Section 3103) means an integrated system of plant and animal production. The practices having a site-specific application that will over the long term. Satisfy of human food and fiber needs, enhance environmental quality and the natural resource base upon which has the agriculture economy depends to make the most efficient use of nonrenewable resources and on-farm resources where appropriate. Natural biological cycles and controls, sustain the economic viability of farm operations, and enhance the quality of life for farmers and society (USAID, 2022).

Sustainable agriculture provides many benefits, such as being environmentally friendly, not harming the health of human life and other animals, and increasing the fertility of the soil. Agriculture should not only reach today’s generation, but future generations should also be taken into consideration. The environment and the many small to large animals in it should be taken into account; therefore, since this principle is used in sustainable agriculture, it is indispensable for everyone to adopt sustainable agriculture.

Table 1. Opinion for Sustainable Farming Practices

S.N	Particulars	Number Pop	Percentage %
1	Crop Cycle	34	8.90
2	Crop diversity	49	12.83
3	Protect crops/seed	48	12.57
4	Integrate paste management	41	10.73
5	Attracting Beneficial Organisms	47	12.30
6	Soil Fertility	57	14.92
7	Animal Grazing	60	15.71
8	Water Management	46	12.04
	Total	382	100

Sources: field survey 2023.

By the analyzing the responses of Table 1, the points are presented as:

4.1 Crop Cycle

It is the oldest and easiest method to maintain the sustainability of the land in sustainable farming. In the crop cycle, they were 8.9% respondent to response. It selected by replacing the soil nutrients that were exploited in the previous crop. For example, planting barley after the wheat crop, planting corn after the wheat crop, and planting vegetables after food crops will maintain soil fertility and reduce seasonal damage. It also prevents the spread of disease. Most of the diseases and insects cause damage to certain types of crops; such damage can be avoided by planting one crop after another.

4.2 Crop Diversity

Farmers can also plant different varieties of the same crop or different crops to protect the crops from diseases and pests. By doing this, 12.83% respondents are saying different types of seeds can obtained from different producers. Significant variation can be maintained among plants. In this way, diversity is maintained and helps to reduce the financial crisis.

4.3 Protect Crops/seed

The mainstay of agriculture is selection advanced sustainable seed. It is also very important to protect the selected seed. If the vision can be properly maintained, it can be taken to the right place at the time of need. The seed should be planted according to the place and where it grows. If this is done, production in agriculture can be increased. This statement is said by 12.57% respondent. Cover crops help replenish organic matter or increase soil microorganisms. An effective has from pest management, soil quality and productivity, pest control, and water conservation.

4.4 Integrated Pest Management

Sustainable agriculture is also a process of effective pest control. In this process, pests are identified in the sorghum. Some pests do not affect the crop much. It is not difficult to control insects by selecting

crops that can control insects, maintaining crop rotation, and using beneficial insects. It is best to use medicine when insects attack. Care should be taken not to apply the drug. Only the 10.73% responses are presented to the affected area of the pest. But, target the pest and not to affect beneficial insects or other wildlife.

4.5 Attracting Beneficial Organisms

A good way to control harmful insects is to protect other insects or animals that eat them. Such insects destroy destructive insects. For example, some insects, including the dung beetle and eat harmful insects. It is better to leave such insects in the crops and fertilizers. So, the opinions of total respondent have agreed 12.30% on this argument of study.

4.6 Soil Fertility

The crops are getting their main nutrients from the soil. Such a case, it is very important to maintain the fertility of the soil. Out of the total respondent, 14.92% are agreeing for increasing soil fertility. The sustainability of agriculture depends on land, not than other factors. Soil management is change the soil fertility. Management is changes in the quantity and characteristics of soil. It is lead to changes in soil structure that are more persistent. Management practices are sustainable must maintain the structure of soil. It help to long term in a state that is optimum for a range of processes related to crop production and environmental quality (Bogunovic et al., 2017; Belmonte et al., 2018).

4.7 Animal Grazing

The grazing of animals move in different places is called the animal-grazing cycle. There are 15.71% respondent were agree in this statement. By grazing animals in different places, different types of nutrients are available. Ratable grazing of cattle can also prevent starvation, as the animals do not always have to graze in the same place. Similarly, the manure left in the grazing area also acts as a natural fertilizer.

4.8 Water Management

The 12.04% respondents are to support water management. They thought effective management of water by managing wasted water and poor irrigation systems. The best way to manage water use is to select local crops. Because such crops are adapted to the local climate can survive for long periods even in the absence of rain. Drought-tolerant crops should plant on dry land. Irrigation should manage effectively. If not well managed, the ground level will decrease and wildlife will negatively affect. Cover crops help to retain moisture in the soil. Limited irrigation is essential for sustainable agriculture.

5. Quality of Good Agricultural Practices

The collection of principles to apply one farm production to another processing safety, healthy food, and nonfood agriculture products by taking accountability, economic, social, and environmental sustainability is called (GAP) Good Agriculture Practices (FAO, 2021).

Agricultural practices that improve the physical aspects of the soil and develop biological properties are called quality agricultural work. Sustainable agriculture is the practice of increasing productivity by continuing agricultural production. If the agricultural work can be made sustainable and quality, there will be no need to starve due to lack of food. People do not have to die without food. No need to struggle for food. So for good agricultural practice, the following actions should be taken by the view of respondent.

Table 2. Quality of Good Agricultural Practices on Agro-Production

S.N	Respondent particulars	Number of Pop	Percentage %
1	Management of agriculture site	60	15.71
2	Uses of chemical seeds	30	7.85
3	Modify Organisms of Genetic	13	3.40
4	Chemicals used records	19	4.97
5	Water irrigation	25	6.54
6	Crop protection	51	13.35
7	Local breed identification	14	3.66
8	Accuracy equipment/ Building	23	6.02
9	Storage and Shipping	26	6.81
10	Traceability and return arrangements	31	8.12
11	Technology and Training	58	15.18
12	Review of Practices	17	4.45
13	Legal provision and further way	15	3.93
14	Total	382	100

Sources: field survey 2023.

By the analyzing the responses of Table 2, the points are presented as:

5.1 Management of Agriculture Site

There are several choice items given to respondents. 15.71% respondents are agreeing to evaluation records of risks. That may transmit to the crops due to the chemicals or biological hazards. Such type of crops has planted in their fields or adjacent fields should prepare. The improvement actions adopted for management of the risks. The contamination crops due to the chemicals or biological hazards should

implement. Similarly, Wheat, barley and rapeseed plants are less affected by early water logging vegetative stages than late reproductive stages (Ploschuk et al., 2018; Wollmer et al., 2018).

5.2 Uses of Chemical Seeds

The chemicals 7.85% are used in the seeds and crops, etc. planted or produced in their fields, keep a record of the application method. Trade name, date, active ingredient, name of the user, amount of uses, etc. said clearly. Chemical fertilizers or other chemicals are providing to seeds. In case of bringing seeds from another farm or nursery, the details of farm or nursery record should keep.

5.3 Modify Organisms of Genetic

The use of genetically modified organisms is prohibited. So, there are 3.40% respondents giving to opinion. They ensured that no genetically modified organisms are used. Changes in the environment lead to a decline in the genetic potential of every plant. If the genetic quality is disappearing, that thing will disappear. The ability to adjust one even in difficult environments should develop while increasing the quality of the product. To develop of capability, it is necessary to develop a method of transferring genetic traits between normal and advanced seeds. This farmer inspires his/her to practice quality agriculture.

5.4 Chemicals Used Records

An identity of the chemical and biological risks in the soil and minimize the possible infection. A record should keep of the recommendation to testing chemicals or organic substances using soil improvement. 4.79% of respondent is replying their opinion on this argument. Human and animal excreta cannot directly used for fresh produce without treatment. Fertilizer application also increases canopy duration and accelerates the production of photo-assimilates translocated to the grain compared with the straw thus increasing the harvest index (Kisaakye et al., 2017). Chemicals used for soil to improve composting, storage, mixing place, and arrangement of rising/falling production. The irrigation source should do in such a way that is no infection. The details of the purchase source of the chemicals fertilizers and soil improvement to use name of such items, date, rate and method of uses.

5.5 Water Irrigation

The water used for irrigation or fertilizing should not have any harmful contamination. If there is an infection, the risk should assess, a safer option should adopted. Water is also required for production operations. The water should check at least annually. At the place of production, water discharged from landfill sites, hospitals, and industries should not use for irrigation. These opinions are come from 6.54% of farmers. Other production activities are arrangements to prohibit the discharge of water.

5.6 Crop Protection

Non-agricultural chemicals Pesticides is recommended by the Government of Nepal. They should purchased and used only from licensed vendors. A mixture of two or more pesticides chemicals should not used by recommended amount. Use the pesticide as indicated on the label to follow the waiting period. Equipment that uses pesticides should keep in working properly cleaned after to use. Dust and

liquid pesticides should keep separately as possible. Expired and used pesticides should be kept in a safe place and disposed of according to the advice of the technician. The maximum residual amount of chemicals is identifying to distribution of such items should stopped. They have 13.35% of opinion come from respondent. They thought, non-agricultural chemicals should use in such a way that there is no risk to food and hygiene. Diseases and pests should control through integrated pest management.

5.7 Local Breed Identification

The local crop project that is red millet and marshi of Jumla has studied in detail. The proposal has been submitted for registration in the quality control center of seeds. It was selected for the registration process through various discussions with local farmers, agricultural scientists of Lee-Bird and NARC. After selection, various testing sites were established. An ethnic characteristics, character traits, production techniques, etc. were collected according to the pattern set by the Seed Quality Control Center. With the aim of racial improvement and promotion of red millet and red marshi, which can easily cultivated in high mountain areas. In Nepal from 2015/16, the research of local breeds was started. Samples were collected from the farmers conducted by setting up biodiversity. According to the data obtained from the research, 3.66% was observed that red millet ripens faster than other varieties of millet have less disease. It produces more is tastier to eat bread. It has its own commercial and medicinal importances are fond of farming.

5.8 Accuracy Equipment/Building

Tools and equipment are used in crop production. It does not cause infection regularly to cleaned and maintained. Before using such equipment, it should use sure to good condition. The constructed for packaging, handling, and storage of produced crops free infection. There is a risk of infection are said by 6.02% respondent. Grease, oil, fuel, and agricultural tools taken from the handling are storage area to prevent contamination of the produced crops. In order to reduce the risk of infection in production sites by irrigation sources and waste managed.

5.9 Storage and Shipping

Agricultural products and potential chemical, biological or physical contamination sources should transport separately. During transportation, it is necessary to arrange a cooling environment for the agricultural products. The 6.81% respondent said humidity is lost when stored in ditches made for air circulation but not infection. Before placing agricultural products in the vehicle, it should check whether there is/are not cleanliness, spilled chemicals and other hostile organisms.

5.10 Traceability and Return Arrangements

The 8.12% responses are to identify the agricultural production site by name code and record it on the site map. If infected agricultural products are sold, consumers should inform as soon as possible. The infections should investigate to corrective actions taken to prevent recurrence.

5.11 Technology and Training

The 15.18% Farmers wants to need access to modern technology. It makes sustainable and reliable agricultural work. The knowledge of new technology identifying to consumables according to location obtained. Training is needed to learn and give information on how to use technology. It also to help how to maintain the health of the agricultural products to produced. It should take training of chemical use and the choice of biological pesticides.

5.12 Review of Practices

What were the practices doing on agricultural in past exercise? Those good deeds should identify continued. Good technical practices increase the level of farmers' knowledge and skills. There are 4.45% of respondent do qualities agricultural practices to develop. As a result, no person loses their life due to hunger. By them, food hygiene and improvement activities should review at least once a year.

5.13 Legal Provision and Further Way

According to the proposed Nepal good agricultural practices implementation guideline, 2016 have a legal existence comply with the prerequisites as per Schedule 7 said guidebook can allowed to act. For the time being to the proposed guidelines, the Department of Food Technology and Quality Control has been designated as the certification body for good agricultural practices in Nepal. Interested farmers, groups, cooperatives or companies can apply for good agricultural practice certification of their agricultural production system. The Department of Food Technology and Quality Control has been designated as the secretariat of organizations authorized to act as Nepal's Good Agricultural Practices Certification Body. These opinions are submitted by 3.93% of respondent.

6. Mutant Crop Breeding

Mutant crop breeding is a new concept for agriculturalists and scientists. Until now, while developing a new breed, a breed is based on the belief that all its plants, seeds, fruits, etc., should be identical in form, color, shape, hereditary, and physically. Mutable crop breeding method is based on the principle that a genetically and physically homogeneous variety can withstand biotic (diseases, pests) and a biotic (drought, excess water, cold waves, hail, hot wind, etc.) adversities or cope with various problems and produce more. Local castes themselves have these characteristics. Cultivating by mixing different varieties of the same crop is not new for the farmers of Nepal. Farmers in the highlands plant a mixture of different varieties of beans, while in the eastern hilly district they plant a mixture of Tulsi (Ocimum tenuiflorum) and Timmur (Zanthoxylum alatum) varieties of rice. In this case, if there is any problem in one of the species, the other species may produce. If you look for it, there are many other such examples in Nepal (Lee-Bird, 2020).

To develop new varieties of rice and bean crops for the farmers of central and highland regions of Nepal based on the concept of mutational crop breeding. Mutant crop breeding programs have been started in Hanku of Jumla and Ghanpokhara of Lamjung since 2018. For this purpose, by collecting the seeds of

local varieties, advanced varieties, and varieties under development with the participation of local farmers, the work of crop development has been started according to the mutagenic crop breeding method in rice and bean crops. The research was started by making 6 mixtures of rice seeds of 66 varieties, including 41 local varieties, 6 advanced varieties, and 19 breeding lines, including Jumli Marshi of Jumla. According to the results of the first year, the production, uniformity, and disease tolerance properties of the mixture of local breeds of Jumla are higher than those of the mixture of other developed breeds and breeding lines, and it has been found that the farmers also liked it. There are 42 local varieties of beans in Gautamwada of Jumla. A total of 49 varieties were investigated using one advanced breed, and 6 breeding lines and 6 mixtures were made. According to the results, in the first year, the production of the sample with a mixture of the local "Kalo Male" variety of jumla was greater than that of other local varieties (Shrestha Pitamber, 2019).

7. Conclusion

A quality of sustainable agriculture preserves biological diversity as well as developing and protecting healthy nature cycles. Sustainable agriculture is based on techniques such as crop rotation, conservation tillage, and pasture-based animal husbandry. This system never relies on toxic chemical pesticides, excessive fertilizers, genetically modified seeds, or activities that degrade soil, water, or other natural resources. Therefore, sustainable agriculture is environmentally friendly. It is not appropriate to compromise human health for the production of food. As dangerous pesticides are not used in sustainable agriculture, the food produced in this way is safe from the point of view of consumer health. Likewise, dangerous arsenic-based substances are not used in animal husbandry. Therefore, sustainable farming keeps people healthy by protecting them from various diseases, toxic chemicals, and other pollutants. The study report show that Management of agriculture site 15.71%, uses of chemical seeds 7.85%, modify organisms of genetic 3.40%, chemicals used records 4.97%, water irrigation 6.54%, crop protection 13.35% and local breed identification 3.66% are found. Similarly, accuracy equipment/building 6.02%, storage and shipping 6.81%, traceability and return arrangements 8.12%, technology and training 15.18%, review of practices 4.45% and legal provision and further way 3.93% are showing the result. As sustainable agriculture helps to provides good opportunities as the local and regional economy to create a strong society.

Food is needed to save people from starvation. Agricultural work for food should be focused on quality forest products. In order to protect the plants that can survive in adverse climates, local varieties of plants should be preserved. Agricultural production can be increased by producing seeds of new varieties from the seeds of local varieties. For this, training with the use of technology in agriculture is necessary. These actions are called the practice of quality in agriculture. This practice helps people develop the ability to fight against hunger. Therefore, development of technology, collection and preservation of local varieties of seeds, production of seeds with the ability to fight diseases, modern farming with added quality in

agriculture, dissemination of agricultural information, and sharing of works such as soil quality protection are beneficial for everyone.

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