**Project Concept Note (PCN)**

***Improving Agroecosystem Services and Climate Change Adaptation in Nepal (IASACCAN)***

15 December 2021

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**PROJECT/PROGRAM CONCEPT PAPER (PCP)**

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| **SECTION 1. BASIC PROJECT INFORMATION** | | |
| **1.1** | **Country** | Nepal |
| **1.2** | **Title** | ***Improving Agroecosystem Services and Climate Change Adaptation in Nepal (IASACCAN)*** |
| **1.3** | **Location(s)** | **Total eight districts:**  **For mustard** – Dang (Lumbini Province), Pyuthan (Lumbini Province), Chitwan (Bagmati Province) and Syangja (Gandaki province). Three districts will be selected including Dang.  **For citrus** - Gulmi (Lumbini Province), Syangja (Gandaki province), Kaski (Gandaki province) and Palpa (Lumbini Province). Three districts will be selected including Gulmi.  **For apple** – Mustang (Gandaki province), Jumla (Karnali Province), and Mugu (Karnali Province). Two districts will be selected including Mustang. |
| **1.4** | **Duration** | 60 months (202…- 202…) |
| **1.5** | **Budget (total), USD** | 14,000,000 (14 million) |
| **1,6** | **Gender marker** |  |
| **1.6** | **Objectives** | 1. The **impact** of the project is to contribute to food and nutrition security through improved agro-ecosystem services and agroecological adaptation to climate change. 2. The **overall general** **objective** of the project is to improve degraded and deteriorating agro-ecosystem services and climate change adaptation for sustainable agriculture, safe food system and safe environment 3. **The specific outcomes** of the project are:  * **Strengthened** technical, social capital and institutional capacities for improving degraded agroecosystem services and to mainstream/integrate climate change agroecosystem-based good adaptation practices into national food and agriculture policies, strategies and plans. * **Assessed, monitored, analyzed and provided** advanced early preparatory management system done for integrated pest and pollinator management (IPPM) with nature-based solution, GIS mapping of crop pollination vulnerability to multi-hazards under climate change and integrated early managed information/technology to cope with pest and disease invasion/infestation, micro-/nutrient imbalance (deficiencies), soil health deterioration and pollination deficit induced risks. * **Improved** awareness, knowledge and communication on agro-ecosystems services management and agroecosystem-based adaptation to climate impacts contributing to strengthened systems to timely disseminate information and nature-based solution to disease and pest, micro-/nutrient imbalance (deficiencies) and pollination deficit induced risks. * **Prioritized and implemented** local investment plan promoting community-based agroecological adaptation (CBAA) to strengthen livelihood strategies through the adoption of agroecosystem-based adaptation technology in targeted areas. |
| **1.7** | **Beneficiary** | People of semi-urban and rural communities of the selected provinces will be involved in the project.   * At least 120 farmer groups involving more than 3000 households (HHs) (more than 60 % women) will be closely engaged in the project and benefitted with agroecological production system and safe food (Agriculture, and livestock). * The technical capacity of government institutions/staffs (25) and local stakeholders (20) in conservation and management of pollinators (300 HHs) will be strengthened. * At least 50 national and 300 district level staff will be trained * Value chain actors including 200 farm households adopting GAP. * More than one million consumers will get access to agroecologically safe and quality products. |
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| **1.8** | **Implementing organization** | Executing Org.: Ministry of Agriculture and Livestock Development of Nepal  Implementing/Technical Assistance providing agency: Food and Agriculture Organization of the United Nations (FAO) |
| **1.9** | **Executive summary** | Nepal has 118 distinct ecosystems covering 28.75 percent of the surface area by agro-ecosystem with its greatly varied geographical and climatic conditions, occupies the most diverse ecosystem in the world spreading across the different physiographic zones of the country: 23 in the lowlands, 53 in the mid-hills, 38 in the mountains, and 5 in areas common to more than one of the above zones. Nepal possesses only 0.1 percent of the total landmass of the world, but harbors about 2.7 percent of flowering plant species, 3 percent of Pteridophytes (ferns) and 6 percent of bryophytes.  However, losing out on biodiversity conservation as well as agroecosystem services degradation, caused by the adverse effect of climate change, both natural and anthropogenic forcing, unsustainable anthropogenic activities, environmental pollution and enormous greenhouse gases (GHGs) emissions, is a serious concern in the country. It is one of the reasons for the Nepal Agro-biodiversity Policy 2007 to consider agro‐biodiversity as a backbone for sustainable development of agriculture, food security and poverty alleviation.  The dynamic interactions between non-living elements (climate and weather) with living organisms like plants, insect pests and disease causal organisms, natural enemies, pollinators, symbiotic agents, decomposers, and other microbes in an agroecosystem have been extremely adversely affected by climate change. The observed and potential effects are change in the population, characteristics, roles, and functions of the eco-system service providers and symbiotic agents, which contribute to regulating services such as soil retention, pollination, dung burial, waste decomposition, natural control of pests and diseases, food sources & habitat /or beneficial insects, water purification, atmospheric regulation as well as to supporting services such as soil structure and fertility, nutrient cycling, water provision, genetic biodiversity resulting in a decline in provisioning services as food, fibre, and fuel production as well as non-marketed services as water supply, soil conservation, climate change mitigation, aesthetic landscapes, and wildlife habitat. Climate change has been being caused by both natural and anthropogenic forcing, but at the present time unsustainable anthropogenic activities, environmental pollution and enormous greenhouse gases (GHGs) emissions are causing erratic climate change. The diversity of natural enemies and pollinators is declining, the frequency of outbreaks and resurgence of the crop pest and diseases is increasing, pollination is in deficit, soil fertility is exhausted and soil health is deteriorated. This complexity is coupled by depraved agriculture practices like injudicious use of agrochemicals, slash burning, flood irrigation, mono-cropping and climate change etc.  The main crops the project will be dealing are apple, citrus and mustard in three geographic elevations. At present, apple is grown on 11,186 hectares in Nepal, with an **annual output of 31,386 tonnes**. Jumla is the largest apple producing district with an annual output of 6,799 tonnes followed by Mustang with 5,727 tonnes, according to the statistics of the Ministry of Agriculture and Livestock Development (The Kathmandu Post, April 21, 2021).  Citrus is cultivated in about 60 districts of Nepal (Acharya, 2016). It is grown in an area of 46,328 ha with only 26,759 ha productive area which accounts total production of 2,39,773 Mt and the productivity is 8.96 Mt/ha (MoALD, 2017). Citrus Fruit contributes 22.37 % of total fruit production in Nepal. Horticultural crops including citrus fruits can contribute in food security, improve nutritional status and provide employment, increase income and increase overall GDP of the country (Bhandari & Aryal, 2017).  Commonly grown oilseed crops in Nepal are mustard, rapeseed, sesamum, linseed, soybean and sunflower. In 2015/16 the area of cultivation of oilseed crops in Nepal was **217,867 hectares**, with a production of 208,291 tons and the yield of 956 kg per hectare. Sep 13, 2019. Mustard seed - production of Nepal increased from 57,000 tonnes in 1970 to **209,745 tonnes in 2019 growing** at an average annual rate of 3.25%.  However, all of these crops have been facing the common problems of climate change adversity, insect pest and disease resurgence, soil health deterioration, pollination deficit caused from the anthropogenic forcing, misuse of pesticides, antibiotics and other agro-chemicals, and need agroecosystem-based climate adaptive good practices underlain by nature-based solutions.    Moreover, farmers in Nepal are practically ignoring/unaware on the value/role of agro-ecosystem services and the regular agro-ecosystem analysis and survey surveillances are lacking. Most of the fragmented smallholder farmers are directly and seriously affected and they do not have the coping abilities. The efforts made by government and non-government organizations are insufficient, and there are big policy and program gaps. The effects are more serious with the cross-pollinating crops like mustard, buckwheat, maize, apple and citrus producers. The severity is increasing year after year together with climate change, leading towards lower crop production and productivity, higher food insecurity and severer poverty in the country.  The proposed project aims to ensure sustainable agri-production through the improvement of agro-ecosystem services contributing to overall food system along with agro-ecosystem restoration and conservation by increasing agroecological adaptive capacity to respond to impacts of climate change in relation to agroecosystem services and increasing agroecological variability for sustainable livelihoods in agriculture sector.  Thus, the project contributes to promoting and conserving the declined agro-ecosystem services through the agro-ecosystem-based package of good practices along with climate change adaptation and their adoption. The direct beneficiaries are all of those institutions and human resources whose capacities are built, small holding farmers, victims of or subject to climate change vulnerabilities, their groups and cooperatives, including other crop producers with their family members, through promotion and conservation of agro-ecosystem services, who gain benefits from increased crop pollination, restoration of natural control of crop pest and diseases, nutrient recycling and improved symbiosis in fruit, vegetable, pulses and cereal agro-ecosystem.  After successful implementation of the project, numerous consumers (domestic and foreign) and farming families will also be benefited from the general production from improving agroecosystem services and climate change adaptation, food safety awareness raised and having the access to safer food. The overall economic benefit is expected from the desired outcome of the project. The benefit starts from the farm – higher and safer agroecological production and better price to the produce. The negative health consequences in human, animal, plant and environment being caused from the anthropogenic forcing, misuse of pesticides, antibiotics and other agro-chemicals shall substantially be reduced.  Farmers all over the country will indirectly benefit from the package of technology and mass awareness building that the project will develop and disseminate. Women farmers (>60%) in particular will be encouraged to involve in the project as the direct beneficiaries.  **This project will produce four specific outcomes in accordance with the overall general objective:**   * **Strengthened** technical, social capital and institutional capacities for improving degraded agroecosystem services and to mainstream/integrate climate change agroecosystem-based good adaptation practices into national food and agriculture policies, strategies and plans. * **Provided** advanced early preparatory management system done for integrated pest and pollinator management (IPPM) with nature-based solution, GIS mapping of crop pollination vulnerability to multi-hazards under climate change and integrated early managed information/technology to cope with pest and disease invasion/infestation, micro-/nutrient imbalance (deficiencies), soil health deterioration and pollination deficit induced risks. * **Improved** awareness, knowledge and communication on agro-ecosystems services management and agroecosystem-based adaptation to climate impacts contributing to strengthened systems to timely disseminate information and nature-based solution to disease and pest, micro-/nutrient imbalance (deficiencies) and pollination deficit induced risks. * **Prioritized and implemented** local investment plan promoting community-based agroecological adaptation (CBAA) to strengthen livelihood strategies through the adoption of agroecosystem-based adaptation technology in targeted areas.   The development objective of the project is to support the Nepal agriculture sector to become climate resilient by promoting urgent and immediate agroecosystem-based adaptation measures by improving agroecosystem services and integration/mainstreaming of agroecosystem-based adaptation to climate change impacts into agriculture sectorial policies, plans, programmes and local actions.  More specifically, the project will focus on promotion and conservation of agro-ecosystem services that defines the roles and responsibilities of relevant stakeholders, and provides suitable incentives and technical capacity to the farmers, agriculture researchers and extension workers. This will also contribute to up-scaling of the best agro-ecosystem practices, and make assessment of its value on crop production, food security, sustainable agriculture and livelihoods of the people. By this means, all segments of agro-ecosystem services, environment protection, soil management, water use, bio-safety, research and extension and other services will be consolidated, integrated and promoted through agro-ecosystem approach.  The project will contribute to address the problem of declining agro-ecosystem services for natural control/regulation and population balance of the pest and pathogens to natural enemies, pollinators, nutrient recyclers and symbiosis which are immensely important for agriculture transformation towards commercialization of healthy products, sustainability and eco-friendliness, whereby achieving food and nutrition security along with improving livelihoods.  The project will contribute to key capacity development and knowledge mobilization towards potential development of a 'national pollinator strategy' for Nepal by other stakeholders, and towards Nepal's contribution to the emerging 'Asian Pollinator Initiative'. |

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| **SECTION 2. PROJECT RATIONALE** | |
| **2.1** | **SI SITUATION ANALYSIS:** Please provide a brief introduction to the current social and economic situation related to the Project (geographic region and beneficiaries, etc.). Please, describe the problem or critical issue which the project seeks to resolve, how the problem was identified, and how will the Project address the problem. If relevant, analysis on gender equality needs to be described. |
| In Nepal, agriculture contributes to one-third of the gross domestic product (GDP) and about three-quarters of the population are dependent on this sector for their livelihood. However, In Nepal, 4.6 million people are food-insecure, with 20 percent of household mildly food-insecure, 22 percent moderately food-insecure and 10 percent severely food-insecure. This problem needs to be solved by a clear and sound policies and strategy by putting natural resources conservation in consideration.  Moreover, there are some crucial food safety challenges in Nepal, which include inadequate hygiene and sanitation, inadequate safe and healthy food for consumption; lack of compliance with Good Agricultural Practices (GAP), Good Hygiene Practices (GHP), and Good Manufacturing Practices (GMP); deteriorated agroecosystem services, polluted and degraded soil and water condition, weak control over use of pesticides and veterinary drugs, leading to residues in agricultural produce and animal products; minimal regulation of food additives; and failure to control mycotoxins in certain foods and animal feeds. There are also current challenges linked to the different tiers of the federal system, such as the need to capacitate staff and supply the new planned provincial and rural offices and laboratories and the need to overhaul numerous pieces of legislation affected by the restructuring.  The existing food system is not safe and therefore, people are facing various food-related illnesses due to prevalent food safety hazards. The United Nations has estimated that every year, nearly one in ten people in the world (an estimated 600 million people) fall ill and 420,000 die after eating unhealthy food contaminated by chemical substances or bacteria, viruses, parasites (WHO/FAO food safety highlights 2019). Unsafe food also hinders the development of many low and middle-income economies, which lose billions worth of productivity due to food-borne related illness, disability, and premature death of workers.  The contamination of food is the biggest problem such as chemical related hazards, including pesticides, fertilizers and veterinary drug residues are also concerning and have been reported among the farmers and consumers of Nepal. Bhandari et. al., (2018) has reported pesticide use of 2.9 kg a.i./ha per crop (in some crops like tomatoes and other vegetables) per season which is more than seven times as compared to the national average (0.396 kg a.i/ha GC and Ghimire (2018)). The negative public health impacts have been observed among the farmers, with women, children, and people with compromised-health, being the most vulnerable. Moreover, the environmental contamination and bio-magnification is other serious problems.  Food safety assurance cannot be achieved focusing only at the conventional or non-eco-friendly part of food chain. It requires a agroecosystem and climate adaptive approach in which food safety measures should be considered from farm to fork.  The role of women in the agriculture sector is crucial given that over 80 percent of women are employed in it. However, women’s significant contribution in agriculture production are under-evaluated and their entrepreneurial potential remains largely untapped. There is gender inequality in Nepalese agriculture particularly in accessing, adopting and using technologies and resources. Rural women are constrained by their poor access in decision-making and bargaining power, triple-work burden (productive, reproductive and community work). In these scenarios, empowering women and reducing their work burden and the drudgery at farm and household levels through provision of gender friendly technologies including agroecosystem-based good practices, is important to increase farm and labor productivity in the process of safe food production. Farmers all over the country will indirectly benefit from the package of technology and mass awareness building that the project will develop and disseminate. Women farmers (>60%) in particular will be encouraged to involve in the project as the direct beneficiaries.  The role of agriculture is rapidly changing worldwide due to globalization, integrated value chains, rapid technological and institutional innovations, climate change impact, and environmental constraints.  In such contexts, Nepal should immediately embark towards agricultural transformation. Nepal is focusing on improving agroecosystem services, increasing agroecosystem-based agricultural production and conserving biodiversity. This will require the country to strengthen its agroecological production at the government as well as in the whole food production sectors.  Agricultural ecosystems provide humans with food, forage, bioenergy and pharmaceuticals and are essential to human wellbeing. These systems rely on ecosystem services provided by natural ecosystems, including pollination, biological pest control, maintenance of soil structure and fertility, nutrient cycling and hydrological services. Preliminary assessments indicate that the value of these ecosystem services to agriculture is enormous and often underappreciated. Agroecosystems also produce a variety of ecosystem services, such as regulation of soil and water quality, carbon sequestration, support for biodiversity and cultural services.  However, apart from the anthropogenic forcing, the climate change impacts on agro-ecosystem services (also in Nepal) adversely, especially on pollination, decomposition of organic matters, symbiosis, food chains, and the natural control, thus affecting overall plant growth and reproduction (Pokhrel, 2016).  The technical support through the project to the Government of Nepal is essential for addressing present challenges related to: i) conserving biodiversity and population of natural enemies, pollinators, decomposers and symbionts/symbiotic agents; ii) attaining sustainable agriculture and increasing crop yield and farm income through restoration/improvement of agro-ecosystem services; and iii) enhancing food security and livelihoods of small holder farmers.  The project should address issues and problems related to agroecosystem services improvement, safe food production and biodiversity conservation in Nepal, which will promote public health, add value and fetch higher prices, thereby contributing to the national food and nutrition security programme of Nepal. Thus, there is an urgent need of the project to support the Government initiative of food and nutrition security through *Improving Agroecosystem Services and Climate Change Adaptation in Nepal (IASACCAN).*  The project will address the problems in Nepal related to:  • Agroecosystem deterioration impacted by anthropogenic forcing and climate change  • Increase in climate change vulnerability affecting in agriculture and agroecosystem sectors  • Poor agricultural practices being followed by farmers  • Pollination deficit and managed bee pollination  • Micro-/nutrient imbalance (deficiencies) and soil health deterioration  • Hindrances to mainstreaming agroecosystem good practices  • The need to enhance capacity development of key stakeholders (governmental, civil society, and research institute) to address the above points through cooperative action and thereby contributing to achieve the Sustainable Development Goals (SDG) goal # 1 and 2. |
| **2.2** | **COUNTRY DEVELOPMENT STRATEGIES AND POLICIES:** Please describe how the Project relates to other relevant national development strategies and policies, and provide the ongoing status of their implementation, results and effects, if any. |
| The Article 36 of the Constitution of Nepal 2015 has explicitly emphasized the right to food as one of the fundamental rights of the citizen. Likewise, the Article 30 and 35 of the Constitution have mentioned the right to clean environment and health respectively as a fundamental right.  The SDGs is the global commitment, which shapes the overall development direction till 2030. Goal 1 (No poverty), Goal 2 (Zero Hunger), Goal 3 (Good Health and Well-being), Goal 5 (Gender equality) Goal 8 (Decent work and Economic Growth), Goal 10 (Reduce inequality), Goal 12 (Responsible Consumption and Production), Goal 13 (Climate Action), Goal 14 (Life Below Water), Goal 15 (Life on Land) are directly related to the project intervention.  Food Act 2023 (BS) governs the food quality and safety in Nepal. Likewise, National Food Safety Policy 2076 (BS) directs the government policy towards the provision of the food safety and quality. The policy emphasizes on promotion, development and adoption of Food safety management tools like Good Agricultural Practices (GAP), Good Veterinary Practice (GVP), Organic Production System, Good Hygienic Practice (GHP), Good Manufacturing Practice (GMP), Hazard Analysis and Critical Control Point (HACCP) involving all relevant stakeholders to ensure food safety in entire food chain. For the supply side of the food system, Plant Protection Act, 2007, Environment Protection Act 2019, Pesticides Management Act 2019, Labor Act 2017 are the major legal provision which are directly related to the farming and the food system in Nepal. Likewise, Animal Slaughterhouse and Meat Inspection Act 2055 (BSS) requires meat to be inspected by veterinarian and only safe meat is marketed.  National Agriculture Policy 2004 and Agribusiness Promotion Policy 2006 are the major agricultural policies which directly govern and promotes the agriculture and safe food production and marketing system. Moreover, there are more than 26 policies which directly govern or impact agriculture and food system in Nepal including National Seed Policy 2056 (BS), National Tea Policy, National Coffee Policy, Supply Policy, National Cooperative Policy, Agriculture Mechanization Promotion Policy, and National Land Use Policy. National Nutrition Policy and Strategy; Multi-sector Nutrition Plan; Nepal Agriculture and Food Security Country Investment Plan; The National Agriculture Policy also highlighted the importance of Organic agriculture and has given due consideration in promotion of Organic agriculture for safe food production. Recently, organic agriculture has been given importance in the approach paper of 15Th Plan too.  The Agriculture Development Strategy (ADS: 2015-2035) is the major vision and strategic document for agriculture development in Nepal. It has explicitly mentioned about the development and promotion of the Good Agriculture Practices.  Moreover, the Government of Nepal in 2018 endorsed the Nepal Good Agriculture Practice (NepalGAP) certification system with an official logo that can be used by the producers and traders. The NepalGAP has been developed under the SAARC GAP scheme with the technical support of the Food and Agriculture Organization of the United Nations (FAO). The Government of Nepal along with FAO has successfully piloted the NepalGAP for three vegetable farms who were awarded the NepalGAP certificate in 2019. However, the certification system has just initiated and thus requires lot of promotions and improvements to have the system work effectively, ultimately bringing benefits to the farmers and the consumers.  There are Environment Protection Act (1997); Environment Protection Rules (1997); Agro-biodiversity Policy (2007); Nepal Biodiversity Strategy (2002). There are NAPA and LAPA in action for the climate adaptation and resilience.  Various Acts, Rules, Policies and Strategies are in place in Nepal to support the safer crop production and food security, health and environment. However, a clear-cut policy on agro-ecosystem services is not there. |
| **2.3** | **JUSTIFICATION FOR INTERVENTION:** Please describe how the need for the Project was determined, and what the rationale/justification for the Project (why the Project is considered to be the most effective way the problem is resolved). |
| In the project area of the previous project FAO/TCP/NEP/3701 the farmers had been facing the problems of Poor agricultural practices, Agroecosystem deterioration, Pollination deficit, Micro-/nutrient imbalance (deficiencies) and soil health deterioration at large especially in mustard, citrus and apple. Agroecosystem-based practices were applied, tested, got positive response and then validated with the active participation of the farmers where they built their confidence by believing by self-doing and seeing. This encouraged the farmers in general that gave rise to the demand of the project. There was a general concurrence of opinion that a full project on *in Nepal* was imperatively needed for solving their pervasive problems. The expected project should be instrumental in resolving the problems by Improving Agroecosystem Services and Climate Change Adaptation by the virtue of integrated pest and pollinator management (IPPM), GIS mapping of crop pollination vulnerability to multi-hazards under climate change, FFS and one health approach, nature-based agroecological solutions, early preparatory management system, good agroecological agriculture practices, (GAP) regenerative and sustainable approach.  Urbanization is rapidly increasing in Nepal and posing a considerable threat to all dimension of food and nutrition security as the majority of urban inhabitants are net food buyers and spend a large part of their income on food. Due to traditional farming system, the existing market could not supply the safe and quality food to meet their dietary requirements and food preferences required for an active and healthy life. Thus, food safety, hygiene, and quality are important requirement for both consumers and national governments. The consumer preferences and awareness for quality, variety and safety are rising rapidly with globalization. To ensure food safety and quality, it becomes important to address the challenge of healthy food production.  Though the Government has given priority to increase agricultural growth and encourages diversification, intensification and commercialization of agricultural sector through eco-friendly cultivation and management, the current agriculture system is being challenged to meet healthy food demand of a growing population with a shift towards urbanization. The Rural and Peri-urban areas of the country will have a pressure to fulfill the urban demand for diversified safe food.  The critical gap needs to be addressed through awareness raising and building capacity of national, provincial and rural stakeholders of the Agroecosystem to assure safety, maintain quality and reduce the high levels of losses through the implementation of good practices. In this context, the project is expected to also contribute in reducing overuse or misuse of pesticides and other chemicals, and soil degradation and loss of biodiversity.    Pesticides and antibiotics are the important management tools in conventional agriculture production system. However, misuse of them is a problem for the domestic production of fresh fruits, vegetables, milk and meat causing serious problems in the health of human, animal, plant and environment.  Introduction of Good Agriculture Practice (GAP), Good Agroecosystem Practice, Good Veterinary Practices (GVP), Good Manufacturing Practice (GMP), and Good Hygiene Practices (GHP) in the food system could solve the above stated issues by minimizing the potential risks associated with food production, processing and marketing system. The concept of Good Agricultural Practice (GAP) has evolved in recent years in the context of a rapidly changing and globalizing food economy because of the concerns of a wide range of stakeholders related to food security, food safety and quality, and the environmental sustainability of agriculture.  Moreover, the project will facilitate to establish stakeholders of Agroecosystem linkages. This presents both challenges and opportunities in achieving food security and nutrition across the rural-urban continuum and involves a series of complex and interlinked factors such as sustainable production models and its promotion which will be beneficial to small-scale producers. Besides, the project further contributes to generate decent employment and income, consumer access to diversified and nutritious products, secure access to natural resources, improve working conditions of producers and their families including women and girls, and the provision of appropriate services and infrastructures required to the food production system.  A gender sensitive approach will be followed in entire project cycle management to ensure equal participation of both men and women in every project intervention meeting their specific needs and priorities. This will contribute to reduce the gender inequality related issues of the entire food system. >60 % women will be encouraged to participate in the project.  At the end of project, it will support to establish agroecosystem services improvement, safe food production and consumption system, enhance food security and nutrition status, and create employment opportunities at various levels by promoting agroecosystem improvement and diversification in the agriculture sector while considering the economic, environmental and social sustainability in the agriculture sector. |
| **2.4** | **LESSONS LEARNED:** Please describe what lessons Partner Country has drawn on (from Partner Country’s own and other’s past experience) in designing this Project. |
| The previous project FAO/TCP/NEP/3701 was launched with the aim of strengthening agro-ecosystems resilience for climate change adaptation and to improve food and nutrition security.  The TCP project aimed to ensure sustainable agri-production and environmental conservation through the improvement of agro-ecosystem services. The project brought about four major outputs: (i) landscape mapping of agro-ecosystem services, and identification of strengths and critical gaps on pollination, natural control, nutrient recycling, symbiosis and soil microbiology identified; (ii) best practices on agro-ecosystem services tested and validated to address the gaps on pollination, natural control, nutrient recycling, and soil microbiology through FFS approach; (iii) Lesson learnt from the testing and validating of agro-ecosystem services documented and database prepared for its up-scaling and replication as well as for public awareness; and, (iv) Detail recommendations and proposal prepared for wider replication/up-scaling/dissemination of improved adaptation practices/agro-ecosystem services against climate change impacts.    The project had had the positive response and demand from the target farmers towards the agroecosystem approach as they had confidence built through believing by self-doing and seeing, which led to a proposal prepared for wider replication/up-scaling/dissemination of improved adaptation practices/agro-ecosystem services against climate change impacts based on the lessons learnt from the testing and validating of agro-ecosystem services in the project.  The government of Nepal through its Department of Agriculture and their outfits (Directorates and Agriculture Knowledge Centres) has been implementing extension activities against climate change effect on agriculture. However, the government efforts as well as the role of non-government organizations supporting farmers on good agroecological practices to promote or conservation of agro-ecosystem services are inadequate. Though efforts have been made, the issues and emerging problems of sustainable intensification of crop production through management of ecosystem services has been overlooked by both development agencies (both government and non-government) and research institutions. The Government of Nepal has started the implementation of the Climate Change Policy 2011 and 2019 which has the goals of improving livelihoods by mitigating and adapting to the adverse impacts of climate change, adopting a low-carbon emissions socio-economic development path and supporting and collaborating in the spirit of the country's commitments to national and international agreements related to climate change. The Policy emphasizes, inter alia, the implementation of activities related to climate adaptation and resilience. Moreover, Nepal being a Party to the United Nations Framework Convention on Climate Change prepared to address the challenges of climate change, NAPA and LAPA are in place as the adaptation framework at national and local level for the climate change adaptation (Nepal’s National Adaptation Plan (Nap) Process 2018). Nepal is launching some climate change adaptation projects in agriculture sector. ADS came into being, however, the government deserves to receive another assistance from FAO in the near future or from any other resource partners to address these constraints. Restoration/improvement of the agro-ecosystem services is a new concept and this is the high time proposing for assistance on it.  Through the Global Pollination Project (GPP) EP/GLO/802/GEF, FAO has provided technical assistance to increasing knowledge and skills on pollinators and pollination; identifying and promoting pollinator-friendly practices and management in one of the Terai district; and conservation and management of pollinators. In Nepal, the GPP was piloted in Chitwan district but the learning wasn’t scaled up in other regions. Besides, FAO implemented IPM base TCP and Trust Fund projects since 1997 to 2013, which initiated Farmers’ Field Schools for Integrated Pest Management (IPM). In addition, a TCP project (TCP/NEP/3502) on strengthening pesticide management in agriculture to reduce risks to health and environment was implemented from 2015-2017. These projects were mainly related to eco-friendly agriculture practices and environment protection. The previous Project “TCP/NEP/3701: Strengthening agro-ecosystems resilience for climate change adaptation to improve food and nutrition security” provisioned the opportunity to test and validate the good agroecosystem package of practices for resilience for climate change adaptation to improve food and nutrition security and for underpinning this project for up/out-scaling the results obtained.  Nepal GAP is in current position after a long development process. FAO has supported the GoN with a Technical Cooperation Programme (TCP) project to formulate GAP Scheme, develop GAP standards, and certification and accreditation systems in vegetable and fruits. The Schemes were successfully piloted in three commercial vegetable farms of the Kathmandu Velley and awarded them GAP certificate in 2019. These farms are now producing safe vegetables targeting domestic and international markets. Around 30 Nepal GAP Lead Assessors have been trained and three witness audits has been done. As a result, these Lead Assessors have become independent auditor for GAP certification. In addition, this project became instrumental in raising awareness of some commercial farmers involved in traditional farming practices across the country on the importance of safe food production.  The lesson learnt from the Global Pollination Project (GPP) EP/GLO/802/GEF, in which FAO has provided technical assistance, FAO implemented IPM base TCP and Trust Fund projects since 1997 to 2013, which initiated Farmers’ Field Schools for Integrated Pest Management (IPM), TCP project (TCP/NEP/3502) the previous Project “TCP/NEP/3701, has enhanced the Government’s confidence in pursuing GAP as well as agroecological approach with tested and validated practices as a sustainable approach to guide the production system towards a sustainable and ecofriendly agriculture that focuses on producing long-term crops, maintaining economic stability of farms, and helping farmers improve their techniques and quality of life while having minimal effects on the environment.  FAO, through its more than 60 years of experience in the development and implementation of programmes and projects to assist developing countries in improving the quality and safety of agricultural and food products as a means to improve public health and enhance competitiveness in international and domestic areas, will also be supporting and adding value in the full project.  Thus, these lessons learnt and experiences gained both by the Government of Nepal and the FAO are the strength for designing the high-quality project document and its implementation. |
| **SECTION 3. PROJECT DESCRIPTION** | |
| **3.1** | **Objective/Outcome/Output:** Please outline the objectives, the expected outcomes, and outputs of the Project. |
| **The impact** of the project is to contribute to food and nutrition security through improved agro-ecosystem services and agroecological adaptation to climate change.  **The overall general objective** of the project is to improve degraded and deteriorating agro-ecosystem services and climate change adaptation for sustainable agriculture, safe food system and safe environment.   1. **Specific outcome-1: Strengthened** technical, social capital and institutional capacities for improving degraded agroecosystem services and to mainstream/integrate climate change agroecosystem-based good adaptation practices into national food and agriculture policies, strategies and plans.   **Output 1.1** Strengthened technical capacity in Ministry of Agriculture and Agroecosystem service providers Development (MOALD), Department of Agriculture (DOA), and Department of Livestock Services (DLS) and local stakeholders on climate change agroecosystem-based adaptation.  **Output 1.2:** Mainstreamed/integrated Agroecosystem services improvement and climate change agroecosystem-based adaptation technology into national agriculture policies, plans and programmes.   1. **Specific outcome-2: Assessed, monitored, analyzed and provided** advanced early preparatory management system done for integrated pest and pollinator management (IPPM) with nature-based solution, GIS mapping of crop pollination vulnerability to multi-hazards under climate change and integrated early managed information/technology to cope with pest and disease invasion/infestation, micro-/nutrient imbalance (deficiencies), soil health deterioration and pollination deficit induced risks.   **Output 2.1:** Improved vulnerability and risk assessment tools for assessing the factors and drivers of the agroecosystem services deterioration including micro-/nutrient deficiency and pollination deficit and improvement, FAO’s crop situation and yield assessment methods introduced and implemented at the local level.  **Output 2.2:** Improved agrometeorological forecast disseminated in target districts in close coordination with similar initiatives at the national level.  **Output 2.3:** Assessed, monitored, analyzed and provided advanced early preparatory management system done for IPPM with nature-based solution, GIS mapping of crop pollination vulnerability to multi-hazards under climate change and integrated early managed pollination information/technology information to cope with pest and disease invasion/infestation, micro-/nutrient imbalance (deficiencies), soil health deterioration and pollination deficit induced risks.  **Output 2.4:** Strengthened capacity of staff and institutions in the government and non-government sectors in conservation and management of pollinators, IPPM, integrated managed pollination and enhanced ecosystem services from them.  **Output 2.5:** Increased knowledge and compliance of farmers, their groups and cooperatives for management of pollinators and conservation of biodiversity and adoption of management practices. Pollinator management practices will be adopted by farmers, their groups and cooperatives.  **Output 2.6:** Provided advanced early preparatory management system done for micro-/nutrient imbalance (deficiencies) and soil health deterioration with nature-based solution.   1. **Specific outcome-3: Improved** awareness, knowledge and communication on agro-ecosystems services management and agroecosystem-based adaptation to climate impacts contributing to strengthened systems to timely disseminate information and nature-based solution to disease and pest, micro-/nutrient imbalance (deficiencies) and pollination deficit induced risks.   **Output 3.1:** Awareness raising, knowledge management and communication strategy drawn, agreed and implementation plan prepared.  **Output 3.2:** Knowledge and awareness on agroecosystem services improvement against the effects of climate change increased and improved agroecosystem-based good adaptation practices and livelihood strategies disseminated for location specific context.   1. **Specific outcome-4: Prioritized and implemented** local investment plan promoting community-based agroecological adaptation (CBAA) to strengthen livelihood strategies through the adoption of agroecosystem-based adaptation technology in targeted areas.   **Output 4.1:** Livelihood alternatives and climate-resilient agroecosystem-based adaptation physical measures prioritized and implemented by promoting Community Based Agroecological Adaptation (CBAA) to climate change.  **Output 4.2:** Agroecosystem-based adaptation technology relevant to agriculture implemented and new stress tolerant varieties introduced to reduce climate risks. |
| **3.2** | **Activities:** Please describe what will be carried out in terms of planned activities, their timing and duration, and who will be responsible for each activity. It should indicate the sequence of all major activities and implementation milestones. |
| |  |  | | --- | --- | | 1. **Specific outcome-1:**   **Output 1.1** Strengthened technical capacity in Ministry of Agriculture and Agroecosystem service providers Development (MOALD), Department of Agriculture (DOA), and Department of Livestock Services (DLS) and local stakeholders on climate change agroecosystem-based adaptation. | | | ***Activities*** | | | O1.1A1 | Activity 1.1.1: Implement capacity development programme at national and district level to enhance technical capacity on climate change agroecosystem-based adaptation, train (at least 50 national and 300 district level) staff, develop training manuals and integrate into MOALD’s and provincial regular activities. | |  |  |   **Specific outcome-1:**  **Output 1.2:** Agroecosystem services improvement and climate change agroecosystem-based adaptation mainstreamed/integrated into national agriculture policies, plans and programmes.   |  |  | | --- | --- | | ***Activities*** | | | O1.2A2  O1.3A3 | Activity 1.2.1: Strengthen technical capacity and cross-sectoral coordination mechanism within MOALD and Provinces to facilitate integration of climate change agroecosystem-based adaptation into agricultural plans and programmes.  Activity 1.2.2: Update national agriculture strategies and district agroecosystem-based adaptation/risk reduction plans available with climate change agroecosystem-based adaptation priorities, investment plans and budget (prepare at least 3 strategies/ plans with budget allocation for agroecosystem-based adaptation actions and get endorsed by the Government). | |  |  |   **Specific outcome-1:**  **Output 1.3:** Institutional development to promote Agroecosystem services improvement and climate change agroecosystem-based adaptation mainstreamed/integrated into national agriculture policies, plans and programmes.   |  |  | | --- | --- | | ***Activities*** | | | O1.3A1 | Activity 1.3.1: Organize inception workshop of the project. Establishment of Project Steering Committee at Federal level; Establishment of Technical Committee at Province level, and Coordination Committee at local/municipality level. |   **B. Specific outcome-2:**  **Output 2.1:** Improved vulnerability and risk assessment tools for assessing the factors and drivers of the agroecosystem services deterioration including micro-/nutrient deficiency and pollination deficit and improvement, FAO’s crop situation and yield assessment methods introduced and implemented at the local level.  ***Activities***   |  |  |  | | --- | --- | --- | | O2.1A1 | | Activity 2.1.1: Improve tools (e.g., information and communication technology) and methods for assessment of pest and disease, micro-/nutrient deficiency and pollination deficit induced risks and vulnerability and get crop yield assessment models introduced at the national level and core staff trained (>25 staff at MOALD, DOA and DLS trained) and linked with target districts. | | O2.1A2 | | Activity 2.1.2: Improve pest and disease risk and vulnerability assessment methods (from output 2.1.1) used to develop spatial risk and impact information on agriculture for certain Rural Municipalities in target districts. | |  | |  | | **Specific outcome-2:**  **Output 2.2:** Improved agrometeorological forecast disseminated in target districts in close coordination with similar initiatives at the national level. | | | | ***Activities*** | | | | O2.2A1 | | Activity 2.2.1: Improved agrometeorological forecast products from the Department of Hydrology and Meteorology (DHM) will be disseminated to 120 farmer groups (at least 3000 men and women farmers) for wider rural communities in Rural Municipalities of the project districts. The end-users will be trained using Farmer Field School (FFS) approach (get new products introduced at the local level and sustainable mechanisms to interpret the forecasts established in districts. | | **Specific outcome-2:**  **Output 2.3:** Assessed, monitored, analyzed and provided advanced early preparatory management system done for IPPM with nature-based solution, GIS mapping of crop pollination vulnerability to multi-hazards under climate change and integrated early managed pollination information/technology information to cope with pest and disease invasion/infestation, micro-/nutrient imbalance (deficiencies), soil health deterioration and pollination deficit induced risks. | | | | ***Activities*** | | | | O2.3A1 | Activity 2.3.1: Provide advanced early preparatory management system done for IPPM with nature-based solution, GIS mapping of crop pollination vulnerability to multi-hazards under climate change and livelihoods diversification through apiculture. | | |  |  | |   **Specific outcome-2:**   |  |  | | --- | --- | | **Output 2.4:** Strengthened capacity of staff and institutions in the government and non-government sectors in conservation and management of pollinators, IPPM, integrated managed pollination and enhanced ecosystem services from them. | | | ***Activities*** | | | O2.4A1 | Output 2.4.1: Enhance technical capacity on IPPM, pollination and pollinator management for specific crop production in the context of varied agro-ecosystem management, to develop Master Trainers. | | O2.4A2 | Output 2.4.2: Introduce, multiply and maintain quality bee colonies for managed pollination of crops. | |  |  |  |  |  | | --- | --- | | **Specific outcome-2:**  **Output 2.5:** Increased knowledge and compliance of farmers, their groups and cooperatives for management of pollinators and conservation of biodiversity and adoption of management practices. Pollinator management practices will be adopted by farmers, their groups and cooperatives. | | | ***Activities*** | | | O2.5A1 | Activity 2.5.1: Organize farmers' training programs in beekeeping and pollinator management using good agricultural practices (GAP), SOP and quality crop production; | | O2.5A2 | Activity 2.5.2: Assist crop farmers in identification of pollination dependent crops | | O2.5A3 | Activity 2.5.3: Train crop farmers in monitoring, collection and identification of flower visitors using the monitoring guidance developed through the GPP; | | O2.5A4 | Activity 2.5.4: Assess pollination deficits for temperate fruits (apple), subtropical fruits (citrus) and tropical crops (mustard), using the protocol developed through the GPP; | | O2.5A5 | Activity 2.5.5: Develop Pollination Management Plans in agriculture suitable for the farmers in selected specific ecological regions; | | O2.5A6 | Activity 2.5.6: Document pollinators GAPs in selected pockets and disseminate pollinator friendly farm practices among farmers; | | O2.5A7 | Activity 2.5.7: Prepare and distribute Beekeeping and Crop Pollination/pollinators' management IEC materials and Farmers Record Keeping Books. |   **Specific outcome-2:**   |  |  | | --- | --- | | **Output 2.6:** Provided advanced early preparatory management system done for micro-/nutrient imbalance (deficiencies) and soil health deterioration with nature-based solution.  ***Activities***  O2.6A1.Activity 2.6.1 Assess, monitor, analyze and provide advanced early preparatory management system done for micro-/nutrient imbalance (deficiencies) and soil health deterioration with nature-based solution.  **C. Specific outcome-3:**  **Output 3.1:** Awareness raising, knowledge management and communication strategy drawn, agreed and implementation plan prepared. | | | ***Activities*** | | | O3.1A1 | Output 3.1.1: Get comprehensive and multi-stakeholder awareness raising, knowledge management and communication strategy formulated and agreed with the Government and non-governmental organizations at national, provincial, district and local levels and applied to fostering implementation of new and currently available agroecosystem-based good adaptation practices. | | **Specific outcome-3:**  **Output 3.2:** Knowledge and awareness on agroecosystem services improvement against the effects of climate change increased and improved agroecosystem-based good adaptation practices and livelihood strategies disseminated for location specific context.  ***Activities*** | | | O3.2A1 Activity 3.2.1: At least 120 Farmer Field School (FFS) facilitators in selected districts will be trained on climate change impacts and agroecosystem-based adaptation in agriculture.  O3.2A2 Activity 3.2.2: At least 120 farmer groups involving a total of over 3000 farmers will be made aware of climate change impacts, agroecosystem-based adaptation measures and alternative livelihood strategies by implementing Farmer Field School (FFS) by trained facilitators in target districts of Nepal.  O3.2A3 Activity 3.2.3: Project-related good-practices (at least 25) will be elaborated and lessons-learnt disseminated via publications, project website and others to facilitate out/up-scaling and integration into policies and plans by the Government and replication in similar situations by non-government organizations | | | | 1. **Specific outcome-4:**   **Output 4.1:** Livelihood alternatives and climate-resilient agroecosystem-based adaptation physical measures prioritized and implemented by promoting Community Based Agroecological Adaptation (CBAA) to climate change.  ***Activities***  O4.1A1 Activity 4.1.1: Investment to strengthen livelihood alternatives and small-scale climate-resilient agroecological physical measures will be prioritized through Local Agroecosystem-based Adaptation Plans of Action by involving the community and farmer groups.  O4.1A2 Activity 4.1.2: Agroecosystem-based diversified livelihood strategies and alternate sources of income (e.g. Fallow land vegetable cultivation, multi-purpose tree species, tree-crop alley farming, intercropping, companion planting etc.,) implemented in rural municipalities in selected districts.  O4.1A3 4.1.3: Small-scale agroecological measures will be implemented to conserve and protect livelihood assets at the community level (e.g., water conservation and harvesting, management of degraded community resources, agroecosystem service providers use and conservation etc.,) in rural municipalities in districts. | | | | **Specific outcome-4:**  **Output 4.2:** Agroecosystem-based adaptation technology relevant to agriculture implemented and new stress tolerant varieties introduced to reduce climate risks.  ***Activities***  O4.2A1. Activity 4.2.1: Improved agroecosystem-based agriculture management technologies (e.g. Improved cropping systems, improved seed storage, sloping land agroecosystem-based agriculture technology, crop and agroecosystem service providers good management practices etc.) implemented to reduce climate risks in selected districts.  O4.2A2 Activity 4.2.2: New stress tolerant crop varieties of main crops and fruits-orchards recommended by Department of Livestock Services (DLS) (DLS) introduced in target districts and tested and validated involving farmer groups using FFS approach. | | | |

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| **3.3** | **Budget:** Please provide a brief requirement by activities. The indicative budget has been estimated in the PCN just to help better understand the project and its requirement. The detailed budget requirement will be adjusted and developed later after the PCN is discussed.   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **SN** | **Specific Outcomes /Outputs** | **Output Budget (USD)** | **Sp Outcome .Budget Soliciting Funds from Dev. Partners** | **Government Contribution in Kinds (USD)** | **Estimated Budget in USD** | | 1 | **A. Specific outcome-1:** To strengthen … ... capacities ... ... and to mainstream/integrate … ... |  | 2,500,000 | 800,000 | 3,300,000 | | 2 | **1. Output 1.1** Strengthened technical capacity in ... (MOALD)… … DOA | 1,500,000 |  |  |  | | 3 | **2. Output 1.2:** Mainstreamed/integrated Agroecosystem … climate change ... adaptation | 1,000,000 |  |  |  | | 4 | **B. Specific outcome-2:** To assess, ... provide advanced early preparatory management system … |  | 3,000,000 | 1,200,000 | 4,200,000 | | 5 | **3. Output 2.1:** Improved vulnerability … the factors ...nutrient deficiency and polli... deficit | 500,000 |  |  |  | | 6 | **4. Output 2.2:** Improved agrometeorological forecast disseminated in target districts… | 500,000 |  |  |  | | 7 | **5. Output 2.3:** Assessed, ... provided advanced early preparatory ... for IPPM with ... | 500,000 |  |  |  | | 8 | **6. Output 2.4:** Strengthened capacity of inst. … managed polli.. and enhanced ecosystem … | 500,000 |  |  |  | | 9 | **7. Output 2.5:** Increased knowledge ...for polli ... of biodiv … adopted by farmers, … | 500,000 |  |  |  | | 10 | **8. Output 2.6:** Provided adv. early prep. mgnt. system ... soil health deterioration ... | 500,000 |  |  |  | | 11 | **C. Specific outcome-3:** To improve awareness, ...on agro-ecosystems services... deficit … |  | 2,000,000 | 500,000 | 2,500,000 | | 12 | **9. Output 3.1:** Awareness raising, ... agreed and implementation plan prepared. | 1,000,000 |  |  |  | | 13 | **10. Output 3.2:** Knowledge and awareness on agroecosystem services improvement … | 1,000,000 |  |  |  | | 14 | **D. Specific outcome-4:** Prioritizing and implementing local investment plan … |  | 3,500,000 | 500,000 | 4,000,000 | | 15 | **11. Output 4.1:** Livelihood alternatives and climate-resilient ... implemented ... | 1,700,000 |  |  |  | | 16 | **12. Output 4.2:** Agroeco...adaptation technology … imple ... tolerant varieties... | 1,800,000 |  |  |  | | 17 | **Project Management/Human resources/logistics for five years:** |  | 3,000,000 | 200,000 | 3,200,000 | |  | **1. Full time:**  Project manager, Agroecosystem Expert, training expert and monitoring and documentation expert; District-base and municipality-base extension offers/ technicians; and Admin and finance/drivers including procurement of a vehicles and bikes for field movement. **2. Medium/Short time:** Subject matter specialists/trainers in various disciplines to support the project depending upon the project requirement. | 3,000,000 |  |  |  | |  | **Total USD** | **14,000,000** | **14,000,000** | **3,200,000** | **17,200,000** | |

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| **SECTION 4. STAKEHOLDER ANALYSIS** | |
| **4.1** | **TARGET BENEFICIARY:** Please describe the following information: a) direct and indirect/wider beneficiary group, b) number of beneficiaries, with gender segregation if necessary (e.g. 300 children rather than children in 3 schools), c) how the target group was identified, d) why they were selected as target group, e) how intended beneficiaries have been involved in Project design, and their expected role in Project implementation and evaluation. If relevant, the target group needs be disaggregated by sex. |
| **Participants and other stakeholders**  The direct beneficiaries are small holding farmers, victims of or subject to climate change vulnerabilities, their groups and cooperatives, including other crop producers with their family members, through promotion and conservation of agro-ecosystem services, who gain benefits from increased crop pollination, restoration of natural control of crop pest and diseases, nutrient recycling and improved symbiosis in fruit, vegetable, pulses and cereal agro-ecosystem.  Farmers all over the country will indirectly benefit from the package of technology and mass awareness building that the project will develop and disseminate by the end of the project. Women farmers are encouraged to involve as the direct beneficiaries (>60%). Government agencies will also benefit from capacity building. Universities and other academic institutions may also benefit from the project results including training and education materials develop by the project*.*  **Beneficiaries’ types and profiles**   |  |  |  | | --- | --- | --- | | **Stakeholder Name** | **Stakeholder Type** | **Stakeholder Profile** | | Rural Communities/farmers | Direct Beneficiary | Farmers | | Decision-makers at national and sub-national level | Direct Beneficiary | Government Institution/body  Line agencies | | Intermediaries at national and sub-national levels | Indirect Beneficiary | Non-Governmental Organizations | | Universities and other academic institutions | Other | Government Institution/body |   There is no negative effect to the beneficiaries/stakeholders by the proposed project action.  The project aims to accommodate around 300 staff trained in agroecosystem-based production system and among them at least 60% will be women. Likewise, more than 3000 farming families will directly benefit from the intervention on improving agroecosystem services and climate change adaptation, and safe food production. Universities will also benefit from having concrete outputs on the NepalGAP and eventually students will be able to gain knowledge through the programme. The improving agroecosystem services and climate change adaptation system will be substantially strengthened. More than 300 entrepreneurs will receive skills/practical trainings on early preparatory management during the project, and this number will increase in the subsequent years.  After successful implementation of the project, more than one million consumers (domestic and foreign) and farming families will be indirectly benefited from the general production from improving agroecosystem services and climate change adaptation, food safety awareness raised and having the access to safer food. The overall economic benefit is expected from the desired outcome of the project. The benefit starts from the farm – higher and safer production and better price to the produce. The negative health consequences in human, animal, plant and environment being caused from the anthropogenic forcing, misuse of pesticides, antibiotics and other agro-chemicals shall be substantially reduced. |
| **4.2** | **OTHER STAKEHOLDERS:** Please describe other stakeholders (e.g. partner government agency, international organization, NGO, donor agency, etc.), if any, including a) name/group, b) respective role(s) and cooperation/coordination mechanism, etc. |
| **Donor Agencies** – The project will be funded by the donor agency and technical supports from FAO has been expected. Federal Government of Nepal – The Ministry of Finance will liaise the project endorsement in the Nepal Government system. After agreement with the MoF, the Ministry of Agriculture and Livestock Development (MoALD**)** – will take lead role in implementation and co-funding (in kinds) for the project. The MoALD will make available its technical staff to support the project implementation. Overall, the MoALD will take coordinating and supervising role.    **Provincial Governments** – Similar to the federal Ministry, the provincial Ministry will do function of co-funding (in kinds) and administrative support as well as the role of facilitation for the project implementation. This project will also be synergizing with the projects and programmes that are being implemented by them.  **Local Government** – The basic level of the farming activities has to be carried out at the local level and the jurisdiction of these activities belongs to the local government. Therefore, onboarding of the local government in the project framework is crucial and challenging as well.  **Private Sector (Traders, Collectors, Retailers, Suppliers)** – The role of the private sector, beyond farmers, is very crucial for the **equitability** food safety point of view. Except, excessive and rampant use of agro-chemicals, risk of food safety arises along the long food system. Developing and least developed countries, including Nepal, have relatively unsafe production system due to limited awareness among the stakeholders and limited availability of the infrastructure along the food production system. Therefore, the project will onboard the private sector on the cost-sharing basis, especially to modernize for the **equitability** for the supply chain.  **Farmers** – Farmers are the prime and the initial actor of the project. Without testing and validating the proper agricultural practices at the farm-level, the production and availability of the safe food is not possible. Therefore, the active participation of the farmers is crucial. In order to bring them in the mainstreaming of safe food production, processing, and marketing, farmers will be aware, capacitated, and supported with required production inputs, tools and equipment to initiate business of safe food production.  **FAO Nepal** – Project implementation and availability of technical support. Role of technical agencies like FAO will be well-placed to provide technical assistance to the Government of Nepal for the implementation of this project in view of the scope of work and its comparative advantage such as:   * Good working relationship with government and other agencies for effective designing, implementation and monitoring the projects and programmes with assured quality; * Possess the required technical expertise and rich experience in improving food quality and safety at all stages of the food chain; * Engagement in developing several tools, guidelines, manuals, training materials and assessment methodologies to facilitate and strengthen capacity building activities in Agroecosystem Services Improvement and Climate Change Adaptation and food nutrition, safety and quality control; * Hosts the Secretariats for the International Plant Protection Convention (IPPC) and Codex Alimentarius Commission, towards integration of legal and regulatory frameworks between food safety and plant health as well as with animal health and the environment: * Involved in providing provided to develop ASEAN, SAARC, and the Nepal GAP; * Well-versed with the Nepalese issues and problems confronting, and opportunities to be harnessed in the area of food safety and quality; * Nepal-FAO cooperation has witnessed over 225 larger and small Nepal specific national level projects and programs covering various aspects of agricultural (Crop, livestock, fisheries) forestry and natural resource management, climate change and rural development that are consistent with the diverse requirements of Nepal. * With its extensive global, regional, and national experience, FAO has significant comparative advantage in bringing its global experience, expertise and technologies on the sustainable agricultural production and environmental conservation through the management of eco-system services in climate change context in producing safe food. Thus, its experience and lessons learnt would be the asset for the designing and implementation of this project. |

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| **SECTION 5. PROJECT MANAGEMENT AND IMPLEMENTATION** | |
| **5.1** | **PROJECT MANAGEMENT:** Please describe a) who will be responsible for planning and management of the Project operations as well as coordinating other bodies and organizations associated with the Project, b) what arrangements will be established to ensure that there will be effective coordination with other relevant programs and activities*.* |
| **Institutional arrangements and coordination for project implementation**   * Ministry of Agriculture and Livestock Development (MOALD) is overall project executing agency, which will nominate a National Project Coordinator (NPC), who will be responsible for ensuring smooth execution of the project on behalf of the Government of Nepal and will act as member secretary of the Project Steering Committee (PSC). * The Project Steering Committee (PSC) will be established in participation of relevant stakeholders. THE PSC shall be responsible for overall strategic directions including policy decision, approval and adjustment of annual plan of action and budget, and review of the project progress. Secretary of MOALD will chair the PSC meeting scheduled minimum twice a year. * Technical Coordination Committee will be established at the province level with a responsibility to review and monitor project implementation, provide opinion and support on technical matter, maintain coordination among the relevant stakeholders of the province, and synergize the project initiatives with the province regular programmes. * Similarly, a Local coordination committee will be formed at the district level with relevant stakeholders to review regular project activities and plans, maintain coordination with relevant actors involved in the project, and synergize the project initiatives with the district/AKC level regular programmes. * The Government will provide office space and administrative support to missions and meetings and will arrange for the clearance of international experts, custom clearance of project equipment. The government will initiate and support local level authorities in providing umbrella supports to farmers groups. The MOALD together with province Government will facilitate to identify and nominate potential participants for the training courses in the country and abroad, and will release the selected staff from the various departments involved in project implementation from their normal duties to ensure their participation at the training, workshops and monitoring the project activities. * The project will be implemented by FAO in close coordination and collaboration with the Government, and private sectors. FAO will be responsible for Project oversight to ensure that project implementation adheres to the Government policies and criteria, and that the Project efficiently and effectively meets its objectives and achieves expected outcomes and outputs as delimited in the Project document. FAO will closely supervise and provide technical guidance to the Project from the concerned units at FAO-HQ, the Regional Office in Bangkok, and the FAO Representation in Nepal.   FAO will report on Project progress together with financial reporting to both the Government/MOALD as per the agreed scheduled. FAO, in consultation with the NPC, will deliver procurement and contracting services to the project using FAO rules and procedures, as well as financial services to manage the project resources. FAO shall maintain a separate account in United States (US) dollars for the Project’s resources showing all income and expenditures. Expenditures incurred in a currency other than United States dollars shall be converted into United States dollars at the United Nations operational rate of exchange on the date of the transaction. FAO shall administer the Project in accordance with its regulations, rules and directives.   * Other partners: Letters of Agreement (LoA) will be signed between FAO and the respective collaborating partners. This will include government, INGO, and civil society organizations, Universities, and technical agencies. Funds received under an LoA will be used to execute Project activities in conformity with FAO’s rules and procedures.   **Gender equality and women’s empowerment:**  **Private sector engagement**  **Knowledge management**  **Monitoring and evaluation** |

**Project sustainability: How the project results will be sustained (economic, social and environment sustainability).**

**Social Sustainability**

At the national level, the socio-economic benefits of the project will be from increased food security and agro-ecosystem-based and nature-based agriculture commercialization, reduced trade deficit and enhanced knowledge on adaptation measures. The goal of agricultural development in Nepal is national food security and agro-ecosystem-based and nature-based sustainable commercialization of agriculture for export promotion. Agro-ecosystem-based and nature-based adaptation to the climate change can safeguard the agricultural production from the actual and possible losses due to climate change and related disasters. The protection of agro-ecosystem-based agricultural production helps in food security and export promotion of high value and fruit commodities reducing national dependency on food import and decreasing widening trade deficit. Reduction in the harms from climate related natural and anthropogenic disasters can also reduce the costs of rescue, relief and rehabilitation of climate related victims. Reduced risks in agricultural production can also decelerate the rate of emigration of youths and abandonment of farmlands.

The project will generate valuable knowledge on agroecosystem improvement and reduction of vulnerability and adaptation to the climate change. The knowledge generated will be helpful to the government for mainstreaming the agro-ecosystem-based and nature-based adaptation to national policies, plans and strategies and planning. The information thus generated will also be useful for the government to provide guidelines for programme planning in agriculture at the district level. The knowledge generated from hill districts will be useful for the entire hill districts (55) in the country and those generated from the terai districts will be useful for all the terai districts (20). The knowledge gained by the government staff and capacity built will be useful for future decision making in agro-ecosystem-based and nature-based adaptation as well as integrated development projects with a component of climate change agro-ecosystem-based and/or nature-based adaptation.

At the local level, the agro-ecosystem-based and/or nature-based adaptation to the climate change improves livelihoods of 3000 vulnerable farmers in rural municipalities reducing additional burdens of climate change. Agro-ecosystem-based and/or nature-based adaptation measures not only restore their actual or expected loss in agricultural production due to the climate change, but also slow down the rate of rise in costs of agricultural production due to climate change. The adaptation decreases the risks of failure of agricultural production increasing the confidence among the farmers and insurance companies. Reduced vulnerability of farming communities not only improves their household food security, but also improves their social status. As the weaker sections of the society like poor, Dalit, Janajati and female are suffering more from the impacts of climate change, the agro-ecosystem-based and/or nature-based adaptation also decreases the disparities among the people in the society increasing equity. Knowledge gained by the farmers from this project will go far beyond the project period benefitting them in different ways in future.

Increased access of the farmers to new crop varieties and agro-ecosystem-based and/or nature-based production technologies helps farmers increase production, better manage risks from droughts and floods and increase resilience. The production technologies that benefit the farmers by increasing resilience include agro-ecosystem-based and/or nature-based conservation farming practices that reduce soil erosion, conserve water and increase biodiversity. Micro irrigation systems to be promoted by the project will increase water-use efficiency and help farmers better manage droughts. Livelihood diversification measures will promote less risky crops including fruits decreasing reliance of the farmers on more climate-sensitive agricultural products.

**Environmental Sustainability**

The Project is designed to yield environmental benefits. The Project aims to improve health of agro-ecosystem-based and/or nature-based agricultural production systems and resilience. The Project also aims to contribute directly to sustainable management of agricultural resources. Hence the Project should only have positive impacts on the environment. There is no reason to expect that any of the Project activities should lead to pollution, watershed degradation, the introduction of alien species or any other form of environmental damage. This situation will be monitored using standard FAO procedures and mechanisms.

**Annex: Project Location Map**

