Ex-Ante Evaluation (for Japanese ODA Loan)

South Asia Division 1, South Asia Department, JICA

1. Basic Information

Country: India

Project: Himachal Pradesh Crop Diversification Promotion Project (Phase 2)

L/A signing date: March 26, 2021

2. Background and Necessity of the Project

(1) Current State and Issues of the Agriculture Sector in India / the state of Himachal Pradesh.

As of 2019, approximately 140 million people, which is equivalent to 10.7% of the total population of India, are living below the international poverty line (people living on less than 1.90 USD per day) (ADB Poverty Data: India).Given the fact, that Agriculture sector has provided employment and sustained the livelihoods of many people with approximately 70% of the population of the state living in rural areas, the National Institution for Transforming India (NITI Aayog) formulated the strategic document “Doubling Farmer’s Income (2017)” for the agriculture sector. This strategy aims to double the current farmer’s income of the year 2015 by the year 2022, by increase productivity and livelihood diversification through crop diversification from food grains to high value added crops such as fruits and vegetables etc., develop irrigation infrastructure, improve seeds and fertilizers, and improve the transaction prices of agricultural products etc.

Himachal Pradesh is a mountainous state with a population of 6.8 million which spreads out at the feet of the Himalayas. About 60% of the working population in the state are engaged in agriculture, and 80% out of that working population are categorized as small farmers owning less than 2 ha of farmland (Economic Survey 2018-2019, the state of Himachal Pradesh).

Himachal Pradesh has three major agricultural challenges. The first challenge is low productivity of food grains. Many farmers produce food grains such as maize and rice, etc. in the rainy season and are dependent on the unstable rainwater, and produce wheat in the dry season. But the productivity of food grain is low due to a lack of agricultural extension officers and restrictions on access to water and equipment for agriculture etc. due to poor infrastructure such as irrigation facilities and access roads. The second challenge is the fact that the cultivation potential of high value added crops has not been fully utilized. The state, with its cool climate in the mountainous area, has the potential to

grow vegetable and fruit trees etc. which are more profitable and for which there is a greater need than food grains. However, many farmers do not have the appropriate cultivation techniques and agricultural equipment, and this potential is not being fully utilized. The third challenge is the lack of supply chain to deliver agricultural products from the field to market in proper manner. In concrete, there is a deterioration of public market facilities etc., inadequate infrastructure for sales promotion and quality control of products, such as warehouses and primary processing facilities etc., and information asymmetry between service providers in the market and farmers. There are also challenges in organizing farmer's groups to raise their bargaining power in order to earn proper profits.

To improve these circumstances, the state government of Himachal Pradesh formulated the VISION 2030 as the state level development policy, moving ahead with efforts to improve profitability by taking advantage of the cool regional characteristics to improve food grain productivity and change cropping patterns to high value-added crops such as vegetables. Also, the development of market infrastructure and construction of agricultural supply chain which strengthens the intermediary functions between farmers and the market etc. have been set as priority issues to improve the profitability of farmers.

In order to tackle the first and second challenges, the state government of Himachal Pradesh targeted 5 districts in the state (Hamirpur, Mandi, Kangra, Una and Bilaspur) with sub-projects in 210 locations through the ODA loan "Himachal Pradesh Crop Diversification Promotion Project" (Hereinafter "Phase 1") (Signed Loan Agreement in February 2011) aiming to improve food grain productivity and expand the production of high value added crops such as vegetables on surplus land through the development of production infrastructures such as irrigation facilities and farm access roads etc. and technical assistance by agricultural extension officers etc. In addition, with respect to the third challenge, as trial supports for farmers, efforts have been made to disseminate techniques of agricultural processing and preservation technologies and market oriented cultivation (off-season cultivation) etc. As a result of these efforts, some farmers have achieved about 5 times profitability, showing that this diversification of crops and high added value has improved farmer profits. The "Himachal Pradesh Crop Diversification Promotion Project (Phase 2)" (Hereinafter "the Project") expands to all districts in the state including 7 districts which require cultivation techniques which are suitable for their own climatic and natural conditions, which differ from the 5 districts

targeted by Phase 1. In addition, the Project will aim to realize further profit across all districts through crop diversification and high added value providing marketing supports for larger markets outside of the state by scaling up the results of the experiments conducted in Phase 1.

The project is positioned as an important project for the agriculture sector in India by developing production infrastructure such as irrigation facilities and access farm roads, farmer support and institutional development as well as strengthening farmer's sales force with marketing development, to promote agricultural productivity, sustainable crop diversification to high value crops and improvement of farmer's income.

(2) Japan and JICA's Agriculture Sector Policy and the Positioning of the Project

The Country Assistance Policy for India (March 2016) formulated by the Government of Japan states "supporting sustainable and inclusive growth" as a priority area with poverty reduction and infrastructure development addressing income generation programmes for the poor (including the improvement of small-scale infrastructure, enhancement of agricultural productivity and establishment of food value chain). Also, the JICA Country Analysis Paper for India (March 2018) states "Inclusive Growth in rural area" as an issue, which mentions the increase of farmer's income through the enhancement of agricultural productivity. Accordingly, the Project is consistent with these policies and analyses.

Furthermore, the Project will contribute to the achievement of Goal 1 (End poverty in all its forms everywhere), Goal 2 (Zero hunger), and Goal 5 (Achieve gender equality and empower all women and girls) of the SDGs. Therefore the Project's implementation is highly necessary.

(3) Other Donors' Activities

Since 2016, the World Bank has been engaged in the "Himachal Pradesh Horticulture Development Project (HPHDP)" in Himachal Pradesh, which aims to improve the productivity and quality of target horticultural crops and sales channels through technical support and the development of supply chains particularly for small-scaled farmers that grow fruit trees. The Asian Development Bank is likewise forming a similar project in a different region from the World Bank project called the "Himachal Pradesh Subtropical Horticulture, Irrigation and Value Addition Project (HPSHIVA)" to provide cultivation

technology support and supply chain infrastructure development etc.

3. Project Description

(1) Project Objective

This project aims to promote agricultural productivity, sustainable crop diversification to high value crops and improvement of farmer's income by development of production infrastructures such as irrigation facilities and access farm roads, farmers support and institutional development as well as strengthening farmer's sales force with marketing development, thereby contributing to economic and social development in all districts of Himachal Pradesh.

(2) Project Site/Target Area

State of Himachal Pradesh, India

(3) Project Components

1) Agricultural production infrastructure development (New construction/rehabilitation of irrigation facilities: about 300 locations; Irrigation area: about 8,000 ha; Farm Access Road development: Total length of about 60 km etc.)
2) Farmer's group organization and agricultural technical support (Farm management and marketing planning support, technical assistance for vegetable cultivation and post-harvest management, support to organize Water User's Association (about 300 locations), livelihood diversification support etc.)
3) Marketing development support (modernization of public wholesale markets (about 10 locations), construction of collection centers (about 10 locations), support to strengthen the organization and management of farmer's producer's group, supply chain development support)
4) Institutional development (training for agricultural extension officers etc., support for conducting baseline and impact surveys etc.)
5) Consulting services (support for detailed design, bid assistance, construction supervision , human resource development, market research, environmental and social consideration and private sector collaboration (pilot project implementation support), etc.)

Sub-projects 1) - 4) above will be set at the Project implementation stage.

(4) Estimated Project Cost

14,148 million yen (ODA loan amount: 11,302 million yen)

(5) Schedule

March 2021 to December 2029 (106 months in total). The Project shall be completed with the completion of all activities (December 2029).

(6) Project Implementation Structure

1) Borrower: President of India
2) Guarantor: None
3) Executing Agency: Department of Agriculture, State of Himachal Pradesh
4) Operation and Maintenance Agency: Same as above

(7) Collaboration with Other Schemes and Donors

1) Japan's Assistance Activities

Created a crop diversification model with an ODA loan "Himachal Pradesh Crop Diversification Promotion Project" (Loan Agreement signed in February 2011) based on the outcomes of the "The Study on Diversified Agriculture for Enhanced Farm Income in the State of Himachal Pradesh" (2007). Along with this, the "Himachal Pradesh Crop Diversification Promotion Project (2011-2016)" was carried out as a technical cooperation project for the purpose of human resource development and the promotion of crop diversification. Currently "Phase 2 (2016-2022)" of this same project is ongoing, focusing on the post-harvest management, processing and marketing of this model. Furthermore, a group of Japan Overseas Cooperation Volunteers (JOCV) have also been dispatched to the Department of Agriculture. The Project will adopt the same model and cultivation technology manual established through existing ODA loans and technical cooperation projects and will continue to collaborate with JOCV.

In addition, the Project will introduce the SHEP (Smallholder Horticulture Empowerment & Promotion) approach by training staff of the executing agency with knowledge co-creation program "South Asia Smallholder Horticulture Empowerment & Promotion." aiming to improve farmer's income through the formulation of market-oriented farm management and marketing plans and the enhancement of farmer ownership of farms etc.,

2) Other Donors' Assistance Activities: N/A

(8) Environmental and Social Considerations, Cross Cutting Issues, and Gender Category

1) Environmental and Social Considerations

① Category: B

② Reason for Categorization: The Project is not located in a sensitive area, nor has sensitive characteristics, nor falls into sensitive sectors under

the JICA guidelines for environmental and social considerations (April 2010), and its potential adverse impacts on the environment are not likely to be significant

③ Environmental Permit: The preparation of an Environmental Impact Assessment (EIA) report for the Project is not mandated by domestic law.

④ Anti-Pollution Measures: During construction, measures such as sprinkling water, isolation of materials, equipment and fuel from water flows and restrictions on operational hour in construction etc. will be implemented and monitored with respect to air quality, water quality and noise/vibration. During operation, guidance will be provided by agricultural extension officers regarding appropriate pesticides use and the regular monitoring of irrigation canals to avoid adverse impacts on water quality from the use of pesticides and chemical fertilizers. These measures during construction and operation will be planned and monitored once the sub-projects are selected in accordance with JICA guidelines for environmental and social considerations.

⑤ Natural Environment: The Project area is not located in a national park or surrounding areas, and any undesirable impacts on the natural environment are assumed to be minimal.

⑥ Social Environment: Of the components for agricultural production infrastructure development, the access farm road maintenance corresponds to a sub-project to renovate an existing farm road, so it is not expected to involve any new land acquisition or involuntary resettlement. Regarding the new construction of irrigation facilities, this is planned to be by voluntary land donation where necessary, after the finalization of the sub-project sites.

⑦ Other/Monitoring: The contractor shall monitor air quality, water quality and noise/vibration during construction under the supervision of the executing agency and the executing agency will monitor water quality during operation.

2) Cross-Sectoral Issues

① Climate Change: The Project will promote water-saving agriculture with irrigation facilities etc. and will contribute to adaptation to climate change with its contributions to the sustainable use of water resources.

② Participatory Development: Under the Project, target farmers will operate and maintain irrigation facilities by organizing a Water User's

Association which bears cost for the operation and maintenance of the irrigation facilities.

③ Countermeasures for Infectious Diseases such as AIDS/HIV : As it is assumed that many workers will be involved in the Project, it is thought that the risk of HIV infections will be high. Accordingly, to prevent the risk of HIV infection during construction, the Project will demand that contractors cooperate with HIV/AIDS countermeasures for workers. This will include the inclusion of HIV/AIDS prevention items in bid documents. Moreover, at the time of screening, the executing agency agreed to a list of measures that must be taken when formulating projects and implementing projects (total of 36 items) to control COVID-19 infections. Items include the formulation and thorough adherence to behavior patterns for preventing infections, providing contractual consideration for contractors when infections increase, etc.

3) Gender Category

Gender Project ■Gender Informed (Significant) (Gender Activity Integration Project)

Activity Description/Reason for Classification: In the Project, it is planned to reflect women's opinions in the establishment and operation of Water User's Associations based on the collected information and analysis of issues concerning gender. A Self Help Group (SHG) for women shall be established to improve the social status of women and to make it easier to reflect their opinions, and plans shall be made to improve livelihoods with value added agricultural products through processing etc. A nutrition sensitive program, is planned to promote kitchen gardens, share nutrition information with nutritional recipes, and carry out nutrition workshops in schools etc.

(9) Other Important Issues: N/A

4. Targeted Outcomes

(1) Quantitative Effects

Outcomes (Operation and Effect Indicators)

Indicator	Baseline (2020 Actual Values)	Target (2031) [2 years after Project Completion]
Farm household income in the Project area	(Note 1)	(Note 2)
Net Irrigation Beneficiary Area Created (ha)	(Note 1)	7,933

Vegetable cultivation area (ha) (dry season) (Note 3)	1,063	3,370
Vegetable cultivation area (ha) (rainy season) (Note 3)	1,465	3,574
Vegetable productivity (tomatoes) (tons/ha) (Note 3)	16.0	40.0
Vegetable productivity (cauliflowers) (tons/ha) (Note 3)	9.3	23.5
Food grain productivity (wheat) (tons/ha) (Note 3)	1.8	2.9
Food grain productivity (maize) (tons/ha) (Note 3)	1.9	2.7
Food grain (rice) (tons/ha) (Note 3)	1.8	2.9
No. of Self Help Groups established	0	100

(Note 1) The baseline is planned to be collected in a baseline survey implemented after the start of the Project.

(Note 2) Target values are set and reviewed according to detailed plans and baseline surveys.

(Note 3) When a sub-project is replaced, the baselines are reviewed based on baseline surveys.

(2) Qualitative Effects

Diversification of livelihoods, improvement of living conditions, improvement of the social and economic status of women, improvement of nutrition, and the efficient transportation of agricultural products.

(3) Internal Rate of Return

According to the following preconditions. the Project's Economic Internal Rate of Return (EIRR) will be 15.5%. The Financial Internal Rate of Return (FIRR) is not calculated because the project is not intended to be a for-profit project.

[EIRR]

Costs: Project costs and operating/maintenance costs (both excluding tax)

Benefits: Benefits of crop diversification (Difference in revenues based on whether or not the Project is implemented)

Project Life: 30 years

5. Prerequisites and External Conditions

(1) Preconditions: N/A

(2) External conditions: N/A

6. Lessons Learned from Past Projects and Application to the Project

From the on-going Project “Himachal Pradesh Crop Diversification Promotion Project” (Loan agreement February 2011), it has been learned that there were limitations on the number of extension officers, and it was found that sufficient agricultural extension service did not reach target farmers. In the background, there were frequent job changes and retirements in the short term and fixed-term employment in the implementation of the on-going project,

With regard to the Project, many of the agricultural extension officers will be employed from outsourcing companies with fixed-term contracts (renewable for one year) as in the previous project. A request was made to the Himachal Pradesh state government to improve the form of employment after a certain trial period, and this request is under consideration by the state. The progress of such measures related to securing agricultural extension officers will be monitored at the Project implementation stage. In addition, technical assistance by instructors under cooperation with private companies as well as instructors hired from outside by farmer’s producer groups is planned to provide sufficient extension service in the Project area.

7. Evaluation Results

The Project is consistent with the development issues and policy of India as well as the policy of Japan and JICA. It will contribute in promoting agricultural productivity, sustainable crop diversification to high value crops and improvement of farmer’s income by development of production infrastructures such as irrigation facilities and access farm roads, farmers support and institutional development as well as strengthening farmer’s sales force with marketing development, thereby contributing to economic and social development in all districts of Himachal Pradesh. Moreover, it will contribute to the achievement of Goal 1 (End poverty in all its forms everywhere), Goal 2 (Zero hunger), and Goal 5 (Achieve gender equality and empower all women and girls) of the SDGs. Therefore the Project’s implementation is highly necessary.

8. Plan for Future Evaluation

(1) Indicators to be Used

As indicated in section 4 above.

(2) Timing of the Next Evaluation

Ex-Post Evaluation two years after project completion

End