

Federal Democratic Republic of Ethiopia

FY2018 Ex-Post Evaluation of Technical Cooperation for Development Planning

“Rural Resilience Enhancement Project”

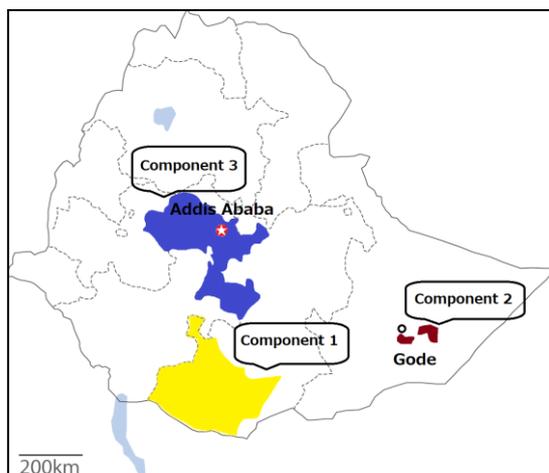
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0. Summary

This project was implemented to make recommendations based on the implementation of 3 pilot projects; 1) water-access improvement, rangeland management and pasture production, livestock-market construction, dryland farming improvement, and so on; 2) construction of irrigation facilities and such; and 3) the development of weather index insurance and others, thereby contributing to referring/reflecting the recommendations in the formulation of disaster-risk-management strategies in the regions as well as decreasing the damage from droughts in the target areas. Its relevance is high because the project direction aimed at the abovementioned objectives in areas where the drought damage is serious is consistent with Ethiopian policies, development needs, and Japan’s aid policy. Its effectiveness is high because the 3 pilot projects were implemented almost as planned and because, based on the results, the recommendations for enhancing the target group’s resilience were submitted by the project’s completion. The level of achievement for the overall goals is medium, as the recommendations based on the pilot projects were referred when regional disaster-risk-management strategies were being formulated, whereas decreases in drought damage by securing a certain level of income were not sufficiently achieved. On the other hand, positive indirect impacts appeared, such as improved quantities of water secured at rehabilitated ponds, while no negative impacts were observed. Thus, the effectiveness and impact are assessed to be fair. The efficiency is fair because both the project cost and project period exceeded the plan, although the project outputs were achieved by the project’s completion. The sustainability of the project’s effects is also assessed as fair because of institutional/organizational problems and some partial technical and financial problems, although sustainability in terms of policy and political commitment is high. Therefore, the project is assessed to be partially satisfactory.

1. Project Description



Project Locations



Livestock market constructed
in Oromia Region (Component 1)

1.1 Background

The northeastern part of Africa is called the ‘Horn of Africa’ (Ethiopia, Kenya and Somalia),’ which includes the southeastern part of Ethiopia. Most of the area is an arid or semi-arid landscape with only meager rainfall, and it is a fragile area where droughts and food crises tend to occur. Many pastoralists live in the Oromia and Somali Regions, the project’s target areas. Among them, some did not settle but produce livestock while moving based on the factors, such as the season, available rangeland and water, and markets. Others have started to engage in agriculture, giving up livestock due to the frequent droughts recently. Still others lived a lifestyle that was in between those of the 2 groups. Differences were also observed in terms of the extent of dependence on agriculture and livestock.

In Ethiopia, the government and donor organizations have mainly been implementing emergency aid programs in order to cope with food crises caused by natural disasters such as droughts, which have repeatedly occurred. Under these circumstances, in December 2011, JICA conducted a preliminary survey to identify the problems and the needs of the people who were hit by the past droughts as well as to collect related basic information. In the southern part of Oromia Region, the repeated droughts increased fragility of inhabitants, in addition to the area’s inherently scarce rainfall. In Somali Region, where Somalis whose occupation is livestock production live, the urgent needs for water and food have increased due to the difficulty of receiving external support there because of security and political problems, unemployment from an inability to maintain livestock production, and inflows of internal and external refugees, in addition to the inherent fragility to drought. In response to a request from the Ethiopian government, the Record of Discussions was signed and concluded with the Japanese government on March 28, 2012, and this project was

commenced as a Technical Cooperation for Emergency Development Planning¹ in April 2012.

1.2 Project Outline

Although no Project Design Matrix was formulated for this project because it is a technical cooperation for development planning, this evaluation study was implemented after sorting out the project plan, to be described in Project Design Matrix format shown below based on the ex-ante evaluation sheet and the Final Report. The project's objective (equivalent to the project purpose) is described at the ex-ante evaluation sheet as "to contribute to improving the regional strategies and programs for enhancing the resilience through implementation of pilot projects." However, the meaning of "contribute" is vague. Although the project purpose is the one to be achieved by the project's completion, the aim of the technical cooperation for development planning by the project's completion was to submit recommendations based on implementation of the pilot projects. In this manner, the level of the project purpose was sorted out. The overall goals were also recognized as described in the "Objective of Utilization of the Recommended Plan" section of the ex-ante evaluation sheet (the project's recommendations are referred/reflected in the process of establishing the regional disaster-risk-management strategies). Furthermore, the objective described in the "Objective to Be Achieved by Utilization" section in the ex-ante evaluation sheet (The drought damage in the target areas is reduced when drought occurs.) was also recognized as an overall goal. The reasons are because 1) this project was to implement pilot projects and develop infrastructure through a technical cooperation for emergency development planning, and "securing a certain level of income for pastoralists and agro-pastoralists in the target areas when droughts occur" was included as an "indicator for the objective to be achieved by utilization" in "the Indicators to Be Utilized for the Ex-post Evaluation" section of the ex-ante evaluation sheet; additionally, 2) "the objective to be achieved by utilization" of this project is not a mid-term or long-term objective that cannot be achieved within 3 years after the project's completion. Except for the above, the project

¹This is used to transfer technology such as survey/analytical and planning methods to counterparts in the partner country, while supporting policy establishment and public program plans. Its aim is to submit a draft plan of the programs and recommendations based on the pilot programs at the time of the project's completion. After the completion, the aim is that the recommendations will be reflected or implemented in the partner country's policies. In the ex-post evaluation of the technical cooperation for development planning, the evaluation focuses on "the objective of utilization of the recommended plan" (what kind of utilization plan is expected, such as references, considerations, or adoption). On the other hand, it is regarded as difficult to measure the achievement of "the objective to be achieved by utilization" (mid-term and long-term objective regarding the kinds of economic and social development effects that will be brought about) 3 years after completion, when the ex-post evaluation is conducted, which is a short span. However, in technical cooperation for development planning in which institution building or capacity building is an important output, or in which pilot projects are implemented in the technical cooperation for emergency development planning, indicators of effects and utilization 3 years after completion are set at the time of planning and are to be assessed during the ex-post evaluation.

plan was confirmed and sorted out basically in accordance with the initial planning documents.

As stated above, the evaluation was conducted based on an understanding of the intended project plan as follows.

Overall Goal		<p>1. The project's recommendations are referred/reflected in the process of establishing regional disaster-risk-management strategies.</p> <p>2. The drought damage in the target areas is reduced.</p>
Project Purpose		In the Oromia and Somali Regions, recommendations are made to enhance the resilience of pastoralists, agro-pastoralists, and former pastoralists, based on the implementation of the pilot projects.
Outputs	Output 1	The pilot project is implemented in a pastoral area to enhance the resilience of pastoralists and agro-pastoralists (Borena, Oromia Region).
	Output 2	The pilot project is implemented in a pastoral area to enhance the resilience of former pastoralists (Gode, Somali Region).
	Output 3	The pilot project is implemented in erratic-rainfall areas to enhance farmers' resilience (erratic-rainfall area, Oromia Region).
Total Cost (Japanese Side)		1,394million yen
Period of Cooperation		April 2012-December 2015 (Extended period: April 2015-December 2015)
Target Areas		Borena, Oromia Region; Gode, Somali Region; and the erratic-rainfall area, Oromia Region
Implementing Agency		<p>Responsible Organization: Bureau of Agriculture and Natural Resources Development, Conservation and Utilization, Ministry of Agriculture</p> <p>Implementing Organizations: 1) Bureau of Agriculture and Natural Resources Development, Oromia Region (Oromia Bureau of Agriculture, at the time of project commencement); 2) Somali Region Basin Development Bureau (Authority was transferred after project's completion. When the project commenced, it was the Somali Region Livestock, Crop and</p>

	Rural Development Bureau.); and 3) the Oromia Pastoralist Area Development Commission Operations and Maintenance Organization: For Somali Region, the Shebelle Irrigation Development Project Office (renamed from Gode Kelafo Irrigation Development Project Office)
Other Relevant Agencies/ Organizations	None
Supporting Agency/Organization in Japan	Sanyu Consultants, Inc.
Related Projects	<p>Technical Cooperation</p> <ul style="list-style-type: none"> • “Index-based Crop Insurance Promotion Project for Rural Resilience Enhancement” (2019–2024) <p>Other Donor Organizations</p> <ul style="list-style-type: none"> • Pastoralist Areas Resilience Improvement through Market Expansion (hereinafter, PRIME) (2012–2017), US Agency for International Development (hereinafter, USAID) • R4 Program (2011–) World Food Programme (hereinafter, WFP) • Pastoral Community Development Projects I, II, and III (hereinafter, PCDP I, II, and III) (2003–2019), World Bank

The project’s 3 outputs correspond to the 3 pilot projects, each of which was called a “component.” (For example, Output 1 meant the pilot project in Borena, Oromia Region and was called “Component 1.”) In Component 1, activities were conducted to improve access to water through rehabilitating small reservoirs, rangeland management, construction of livestock markets, and dryland farming improvement in Borena, Oromia Region. In Component 2, irrigation facilities were constructed, Water Users Associations (hereinafter, WUAs) were established, and training for beneficiaries and those who were concerned was implemented in Gode, Somali Region. In Component 3, weather index insurance (hereinafter, WII) was developed, an extension system was established, and extension activities were conducted in the erratic-rainfall area of Oromia Region. Especially in the community-based projects (hereinafter, CBPs) of Component 1, the activities that the communities had traditionally conducted such as improvement to ponds and rangeland management (e.g., cutting bushes that hamper the growth of grasses for forage)—were strengthened through a participatory approach and the provision of hand tools. They were conducted with the

communities' initiative, from their planning to implementation.

1.3 Outline of the Terminal Evaluation

The terminal evaluation was not conducted because the project was an instance of technical cooperation for development planning.

2. Outline of the Evaluation Study

2.1 External Evaluator

Mayumi Hamada, Foundation for Advanced Studies on International Development

2.2 Duration of the Evaluation Study

This ex-post evaluation study was conducted with the following schedule.

Duration of the Study: November 2018– December 2019

Duration of the Field Study: February 12–26, 2019; April 23–28, 2019

2.3 Constraints during the Evaluation Study

The external evaluator and the local consultant could not conduct a site survey in Borena, Oromia Region, due to security reasons. Hence, the survey conducted was mainly based on document review for Component 1, and some interviews were conducted with some agriculture Development Agents (hereinafter, DAs), who were invited to the capital from Borena, to collect qualitative information.

3. Results of the Evaluation (Overall Rating: C²)

3.1 Relevance (Rating: ③³)

3.1.1 Consistency with the Development Plan of Ethiopia

At the time of the ex-ante evaluation, the government and the donor organizations were implementing activities such as food aid, income generation and diversification, water-resource development, and settlement under the framework of *the Productive Safety Net Program* (hereinafter, PSNP) (2005–)⁴, in order to cope with the food crisis brought by natural disasters such as droughts in Ethiopia⁵. *The Plan for Accelerated and Sustainable Development to End Poverty II* (hereinafter, PASDEP II) (2010–2015) also stipulated that freeing the country itself from food shortages by improving irrigation facilities and increasing food was the important key. The Ethiopian government aimed to expand irrigation

² A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory

³③: High, ②: Fair, ①: Low

⁴<https://www.wfp.org/sites/default/files/PSNP%20Factsheet.pdf>

⁵See the ex-ante evaluation sheet P2.

areas by 280% in order to achieve this⁶.

The PSNP is still in place at the time of this ex-post evaluation. *The National Policy and Strategy on Disaster Risk Management* was established in 2013 and set a national goal to “reduce dependency on and expectations for relief aid by bringing attitudinal change and building resilience of vulnerable people,” as 1 of its 4 specific objectives. The strategy had not changed at the time of this ex-post evaluation. Moreover, the Ethiopian government set the goal of “maintaining agriculture as a major source of economic growth” as 1 of its 7 strategic pillars in *the Growth and Transformation Plan* (hereinafter, GTP) (2010/11-2014/15). Besides, it also stipulates to strengthen smallholder agriculture, expand irrigated areas, improve the marketing system for livestock development and enhance livestock production, and promote PSNP⁷.

As stated above, the Ethiopian government has been trying to strengthen its actions to cope with natural disasters, including droughts and food crises, and to expand irrigated areas and livestock production, while emphasizing agriculture. The project direction to enhance the resilience of pastoralists, agro-pastoralists and former pastoralists against droughts in the areas where the drought damage is serious has been consistent with the Ethiopian policies from the planning stage until the project’s completion.

3.1.2 Consistency with the Development Needs of Ethiopia

In the southern part of Oromia Region, the fragility of inhabitants was increased at the time of the ex-ante evaluation due to frequent droughts, in addition to its inherently meager water sources and rainfall. In the Somali Region, which has a severe natural environment, such as meager rainfall, high temperature, and desertification, many people were traditional pastoralists, but some of them could not sustain their lifestyle of livestock production due to serious droughts in the past and lost their jobs⁸.

In the meantime, according to the questionnaire survey of the Oromia Pastoralist Area Development Commission (hereinafter, OPADC), which is the implementing organization of Component 1, droughts occurred in Borena in 2011-2012 and in 2014-2015, which respectively affected 650,000 and 700,000 people out of the 1.1 million population. Thus, the damage from droughts can be said to have been serious throughout the project’s implementation period.

The Ministry of Agriculture as well as all the project’s implementing organizations indicated that the project’s direction of enhancing the target group’s resilience against droughts, instead of providing them with food or cash, was consistent with the country’s

⁶ The Droughts in the “Horn of Africa” Area, Basic Information Collection and Confirmation Survey Report, Federal Democratic Republic of Ethiopia (Agriculture Sector) P23

⁷GTP P21-22, 45-49

⁸See the ex-ante evaluation sheet P1 and the Final Report Summary P1

development needs⁹. In Component 2, a notable comment was that some of the people in Gode were afraid of losing emergency aid by participating in this project¹⁰. On the other hand, many of the people in Gode did not have sufficient means of living and were forced to depend on the food aid after losing their jobs or to leave their hometown to seek income¹¹. Hence, it is considered that the need for increased income was objectively high.

Concerning the appropriateness of when the project was commenced in terms of security and social conditions, all of the implementing organizations indicated that the time of commencement was appropriate and without any problems. In addition, the year when the project was commenced, 2012, was the time when donor agencies worldwide started to provide assistance to cope with the large-scale drought that occurred in Ethiopia, Kenya, and Somalia in 2010 and 2011. Thus, the time when the project was commenced is regarded as being appropriate, because it was implemented in a timely manner, in line with the global trend¹².

No significant improvements to the drought damage have been observed in the target areas from the planning stage until the project's completion. Thus, the need for coping with drought was high. Besides, it was consistent with the inhabitants' development needs, from the implementing agencies' viewpoints, to enhance the resilience of farmers and pastoralists against droughts, instead of providing food or cash. The time of project commencement was also appropriate. Based on the above, the consistency with the development need is high.

3.1.3 Consistency with Japan's ODA Policy

At the time of this ex-ante evaluation, *the Country Assistance Policy for Ethiopia* (2012) stipulated that not only expanding agricultural production but also coping with natural disasters were important for establishing food security in rural areas such as farming and pastoral areas, while agricultural and rural development were included in the major areas of cooperation. JICA's principle of cooperation also indicated that JICA would implement assistance to enhance resilience in areas where food security is fragile, in the *Disaster Risk Management and Food Security Program*, in its assistance to agriculture and rural development¹³. Therefore, the project direction matched the Japanese aid policy at the time of planning.

⁹Questionnaires sent to the implementing agencies

¹⁰If a certain level of food or income is acquired by participating in this project, there was a possibility that those who used to receive emergency aid would be removed from the recipient list. The provision of emergency aid from the Ethiopian government and donors was stable, although labor was required to be newly engaged in irrigation agriculture, and the food and money to be earned from it were uncertain. For this reason, it is regarded that the people in Gode felt it was risky, and they were not necessarily positive in engaging with the pilot project for irrigation agriculture. Final Report PIII-7-1-III-7-2

¹¹Interview with the agro-pastoralists

¹²Interview with those who were concerned with the project

¹³See the ex-ante evaluation sheet P2.

As stated above, this project was highly relevant to the country’s development plan and development needs as well as Japan’s ODA policy. Therefore, its relevance is high.

3.2 Effectiveness and Impact¹⁴ (Rating: ②)

3.2.1 Effectiveness

3.2.1.1 Project Outputs

This project was an instance of technical cooperation for development planning; it was aimed at providing recommendations for enhancing resilience of pastoralists, agro-pastoralists and ex-pastoralists, based on the implementation of the 3 pilot projects (Outputs 1-3) before its completion. Hence, the implementation situations of the 3 planned pilot projects were assessed as the achievement situations of the outputs. An overview of the respective outputs and their achievement statuses is shown in Table 1. Each output was achieved. Although Output 2 brought about an extension due to delays in the construction work for the irrigation facilities, the achievement of Outputs 1 and 3 were high. Thus, it is safe to say that the project outputs were achieved mostly as planned.

Table 1: Achievement of Outputs

Outputs	Major content	Achievement	Reasoning
1. The pilot project is implemented in a pastoral area to enhance resilience of pastoralists and agro-pastoralists against droughts.	1) Community Based Projects (hereinafter, CBPs) ¹⁵ 2) Rangeland improvement and pasture production 3) Dryland farming improvement ¹⁶ 4) Secondary livestock-market construction	◎	<ul style="list-style-type: none"> • As for the CBPs, 42,000 hand tools were provided to 32 villages, and approximately 400 activities were continuously implemented. The average number of participation days for the activities per household per month increased by 170% in Phase 1 and 127% in Phase 2, compared with before project commencement. • Activities for rangeland improvement and pasture production were also actively implemented.

¹⁴ Sub-rating for Effectiveness is to be put with consideration of Impact.

¹⁵This project called the activities supporting development activities which have been conducted by the villagers on a routine basis as the Rural Resilience Enhancement Project (RREP) approach and has conducted CBPs as the activities to substantiate it in Component 1. Its major activities included the rehabilitation of a small reservoir and cutting bushes to secure pasture for livestock foraging. In the target area of Borena, communities have managed small reservoirs (*haro*) and traditional wells (*ella*) by themselves for a long period. The term “development activities” above means the activities that can be continued only by the communities if there is no large-scale drought and those that have actually been conducted. In the CBPs, a cash-for-work approach was not adopted, and wages were not paid because the CBPs supported the activities that had been implemented by the community itself. In the meantime, the pasture production activities introduced pasture seeds, improved seeds, and superior crop varieties to improve dryland farming. The villagers had never experienced these new technologies before, and this was different from CBPs (Final Report Summary P4/17).

¹⁶Technical training and seeds of superior varieties were provided to improve dryland farming because the technology and knowledge of those who were engaged with agriculture were limited, as pastoralists were dominant in Borena and agriculture had a short history there.

(Component 1: Borena, Oromia Region)			<ul style="list-style-type: none"> • As for the implementation of activities to improve dryland farming, differences were observed by district (<i>woreda</i>) and village¹⁷. • Secondary livestock markets were constructed at 2 sites.
2. The pilot project is implemented in a pastoral area to enhance the resilience of former pastoralists against droughts. (Component 2: Gode, Somali Region)	<ol style="list-style-type: none"> 1) Construction of irrigation facilities at 4 sites in Gode 2) Procurement of equipment for pumping facilities 3) Soft components (establishment of WUAs, training for farmers, DAs, operators for the irrigation facilities) 	○	<ul style="list-style-type: none"> • Irrigation facilities were constructed at 4 villages in Gode. The irrigation areas are 100 ha each. Training was conducted for the farmers, DAs, and operators. • Construction delays resulted in an extension (the details are described in the Efficiency section).
3. The pilot project is implemented in the erratic-rainfall area to enhance farms' resilience against droughts. (Component 3: Erratic-rainfall area, Oromia Region)	<ol style="list-style-type: none"> 1) Development of WII 2) Training (for DAs, intermediary organizations, and insurance companies) 3) Extension of WII 	◎	<ul style="list-style-type: none"> • The rate of insured farmers was high: 12.3% (1,286 households) in the 15 target villages in Phase 1, 19.4% (5,623 households) in the 45 target villages in Phase 2, and 9.8% (2,845 households) in the 45 target villages in the follow-up phase.

Source: Questionnaires sent to the implementing agencies and the Ministry of Agriculture

Remarks: The grades for the achievement are as follows: ◎, The activities and results went beyond what was planned; ○, the activities and results mostly occurred as planned; △, the activities and results neither went as planned nor deviated too far from the plan; ×, the activities and results mostly did not occur as planned; ××, the activities and results did not occur at all as planned.

3.2.1.2 Achievement of Project Purpose

The recommendations based on the implementation of the 3 pilot activities were submitted to the Ethiopian government by the project's completion¹⁸. An overview of the recommendations is shown in Table 2. The contents of each recommendation can be assessed as being consistent with the purpose of enhancing resilience against droughts, which was the project's aim, based on sufficient observation and understanding of the target areas' situation from the viewpoints of human resources, organizations and social conditions during the implementation periods of the pilot projects. Therefore, it can be assessed that the project purpose (that in Oromia Region and Somali Region, recommendations are made to enhance the resilience of pastoralists, agro-pastoralists, and former pastoralists based on the

¹⁷Interview with the DAs

¹⁸Questionnaires sent to the implementing agencies and the Final Report.

implementation of the pilot activities) was achieved by the project’s completion. In the meantime, no specific influences by related projects conducted by other donor organizations were observed from the project implementation period until the project’s completion¹⁹.

Table 2: Overview of the Recommendations

Component	Overview of the Recommendations
Component 1	The project’s Final Report indicated that the RREP approach should be expanded because the project’s effects had been acknowledged, and 21 specific recommendations in 7 categories were made regarding the expansion. The recommendations include utilizing and strengthening social ties, combining the RREP approach and project approach, and selecting appropriate programs/projects for each area.
Component 2	There were 10 recommendations in 6 categories regarding the points to be referred to when irrigation development is continued or expanded within and around Gode in the future, including a deployment strategy on development projects in the areas where emergency aid will be provided, the utilization of construction machinery owned by the Ethiopian government, and more and the enhanced capacity of experts in agriculture for extending irrigation agriculture through pumping irrigation.
Component 3	There were 10 recommendations for promoting WII in areas that are susceptible to droughts due to little or unstable rainfall, including specific points to keep in mind when selecting target sites; mobilizing DAs and district staff for awareness raising and extension activities for insurance; incorporating activities for extending insurance to the routine work of DAs; and establishing an implementation structure for monitoring weather data (to be done by a third party).

Source: Final Report P II-9-1-9-4, III-7-1-7-3, IV-7-1-7-3

Based on the above, the project achieved its purpose. The content of the recommendations was based on the implementation of the pilot activities and was also consistent with the project’s objective (i.e., to enhance resilience against droughts). Therefore, the project’s effectiveness is high.

¹⁹Interview with the Japanese experts

Box: The Challenge of Promoting Self-Sufficiency without Relying on the Existing Approach

In the projects that other donor organizations supported, the cash-for-work approach (in which cash is paid for the work) is often adopted in participatory development, particularly when poor villagers conduct rehabilitation of small reservoirs and similar places. In addition, development-assistance projects that aim to extend WII to poor farmers are likely to combine extension activities with government subsidies. However, concerning the rehabilitation of small reservoirs and such in the RREP approach (CBPs) in Component 1, as well as the extension of the WII in Component 3, the Japanese expert team chose not to make cash payments or to ask for government subsidies in either case. This is because they emphasized sustainability in supporting the activities that had been traditionally conducted in the communities of Component 1 and because they tried to verify feasibility to extend the WII to low-income farmers without using subsidies in Component 3. During the implementation period, in Component 1, the projects in the target areas that other donor organizations supported (e.g., for rehabilitating small reservoirs) were implemented with the cash-for-work approach. However, the rehabilitation work that the other donor organizations performed was on a short-term basis afterward, the communities returned to their ordinary lives and conducted the project's CBP activities without being paid. As a result of the project's activities, the frequency with which the CBP activities were implemented in Component 1 drastically increased, and the rate of WII-insured farmers in Component 3 increased from 12% in Phase 1 to approximately 20% in Phase 2²⁰. In Component 1, during the workshop at the project site (which took place before the project's completion), the participants observed that the RREP approach was better than the cash-for-work approach in terms of both relevance and sustainability. Some participants said that the cash-for-work approach, when applied as part of other projects carried in pastoralist areas, led to weaker social ties and less sense of collaboration—thereby resulting in lower relevance and sustainability²¹. Thus, the daring decision not to pay, particularly in a country or region where other donor agencies take subsidies or use the cash-for-work approach, requires courage. However, because the activities' designs were based on sufficient information collection and a thorough comprehension of the sites' social and cultural aspects, the results clarified that, in what case it should be paid for the rehabilitation work in Component 1, and the possibility and condition for low income farmers to pay insurance premiums in Component 3.

²⁰ Interview with Japanese expert, Final Report Summary P 4/17, 15/17, 16/17

²¹ Final Report P II-4-15

3.2.2 Impact

3.2.2.1 Achievement of Overall Goals

(1) Achievement of Overall Goals

The achievement of Overall Goals and its indicators are shown in Table 3. With regard to the 2 indicators for Overall Goal 1 (a reference/reflection of the recommendations for the process of formulating regional disaster-risk-management strategies), 2 of the 3 implementing organizations replied that the recommendations were included in the formulation of the above strategies, even though they are not yet reflected in the strategies. However, the regional disaster-risk-management-strategies are formulated by region-specific committees, which were not the organizations of this project. This can be a partial explanation for why the project’s recommendations have not yet been reflected in the disaster-risk-management strategies. As for Overall Goal 2 (decreasing drought damage when drought occurs²²), in Component 3, the intended effect (avoiding loss of property by allowing for seeds to be bought again when they have been damaged by a drought) was achieved, but for Components 1 and 2, the effects were limited. Thus, the achievement of Overall Goal is medium.

Table 3: Achievement of the Overall Goals

Overall Goal	Indicator	Achievement	Reasoning
1. The project’s recommendations are referred/reflected in the process of establishing regional disaster-risk-management strategies.	1-1 The project’s recommendations are referred in the process of establishing regional disaster-risk-management strategies.	○	<ul style="list-style-type: none"> • Components 1 and 3: Oromia Region’s Disaster Risk Management Committee formulates regional disaster-risk-management strategies, and the project’s recommendations are often referred in these strategies²³. • Component 2: Information could not be obtained from the implementing organization that took over the project at the regional level (refer to the Sustainability section for details) because they answered that they were not in a position to provide that information. However, the project’s recommendations are unlikely to be referred in the process of formulating the strategies, as the project’s information was not kept in the transfer.
	1-2 The project’s recommendations are reflected in the process of establishing regional disaster-risk-management strategies.	×	<ul style="list-style-type: none"> • Component 1: The recommendations are not yet reflected in the regional disaster-risk-management strategies, but they are included in the implementing organization’s action plan²⁴. However, that action plan has not been obtained (even though it was requested). • Component 2: It is not clear whether this has been achieved for the above reason. However, it is unlikely to be reflected in the strategy for the reason stated in 1-1.

²²Interview with the Japanese experts

²³Interview with the implementing agency

²⁴Interview with the implementing agency

			<ul style="list-style-type: none"> • Component 3: The information has not been reflected in the strategy yet.
2. The drought damage is decreased in the target areas when drought occurs.	Securing a certain level of income for the pastoralists and agro-pastoralists in Borena, Oromia Region; the former pastoralists in Gode, Somali Region; and the farmers in the erratic-rainfall area of Oromia Region during droughts.	△	<ul style="list-style-type: none"> • Component 1: There was a comment that the income increased because the construction of a livestock market enabled pastoralists and agro-pastoralists to utilize the market and directly sell without involving brokers. However, there was also another comment that pastoralists who live far from the livestock market cannot utilize it, as they cannot afford the transportation costs; even when they can visit the market, their livestock die or become weak due to the long distance. • On the other hand, the comments included “Income is decreasing (as there is no water or income if it does not rain)”and “There is no change, as the income has been as small as it used to be.” • Concerning the situation of food security, the comments included “Food is obtained through the government’s PSNP and aid from donor organizations”; “The amount of food is not increasing;” and “It depends on the amount of rainfall in that year.” • Component 2: Before the construction of the irrigation facilities during the project, the farmers had nearly no cash income. However, the crops were harvested; the food was secured for the pastoralists and livestock; and, at the sites where a surplus was produced, a certain income was gained, when the irrigation facilities were functioning. However, there is no data to support the above claims. • Component 3: Farmers who were insured by WII as part of the project and who received insurance payments due to a drought could buy seeds a second time.

Sources: The ex-ante evaluation sheet for the overall goals and their indicators (P3-P4); the questionnaires sent to the implementing agencies; and interviews of the DAs, WUAs, and villagers regarding the goals’ achievement
Remarks: The ratings for the achievement are as follows: ⊙, Achieved more than expected; ○, Achieved as much as expected; △, Neither achieved nor failed to achieve; ×, Not achieved sufficiently; × ×, Not achieved at all

The effects of external elements on the achievement of the overall goals are as follows:

1. Economic Aspect (continuity of support from other donor organizations in the sector): Other donor organizations have provided mostly continuous assistance, with no specific influence to achieve the overall goals.
2. Social Aspect (suspension or discontinuation due to conflict, etc.): No specific suspension or discontinuation of the activities was observed. There was a short-term conflict in Borena, but it did not affect the project except in a specific area²⁵.
3. Natural Aspect (serious damage due to droughts, floods, etc.): Although droughts

²⁵Questionnaire sent to the implementing agency

occurred after the project’s completion, their frequency and damage cannot be described as especially serious when compared to the damage during the implementation period. On the other hand, this project inherently consists of pilot projects that enhance resilience against natural disasters such as droughts; the existence of droughts and floods is assumed.

Therefore, it cannot be said that any failure to achieve the overall goals was due to these external elements.

(2) Achievement of the Outputs and the Project’s Purpose (from the Project’s Completion through the Ex-post Evaluation)

Because this project is an instance of technical cooperation for development planning, this section focuses on the continuation and utilization of each pilot activity from the project’s completion through the ex-post evaluation (Table 4); in other words, the achievement of the outputs is assessed. As the project purpose is to provide recommendations, the continuation of the project purpose is not included in the assessment here.

With regard to Component 1, differences were observed in the status of the continuation even though all 4 activities mostly continued. Hence, the achievement of outputs since the project’s completion is at a medium level. Concerning Component 2, the irrigation facilities have continued to function at only 1 site out of 4. At the other 3 sites, the facilities were not functioning at the time of the ex-post evaluation. The causes of the malfunctions are as follows: a lack of engineers who can fix generators, unavailable machinery for fixing canals, canals and pump bases covered with sand, and damaged division boxes. Thus, the achievement of Component 2 since the project’s completion is low. As for Component 3, the activities with the WII were not conducted after the project’s completion. This is likely due to the difficulty of continuing it in the private sector, as the target farmers are poor, which makes it uneconomical for a private insurance company to develop, disseminate, and sell insurance without the support of the Ethiopian government or donor organizations.

Table 4: Continuation and Utilization Status of the Pilot Activities after Completion

Component	Continuation and utilization of the pilot activities
Component1	1. RREP Approach (CBPs): From the project’s completion through the ex-post evaluation, the pastoralist community continued their activities on their own initiative. However, most of the provided materials (hand tools) such as shovels and handcarts had been damaged and were not replaced with new ones, which reduced the frequency of the activities ²⁶ .

²⁶Interview with the implementing agency

	<p>2. Rangeland improvement and pasture production: The implementing organization recognizes this as the pilot project with the best status in terms of its continuation since the project's completion (others, such as the livestock market, also have the best status): a 5 on 5-point rating scale²⁷. However, when pasture did not grow due to poor-quality seeds or water shortages, or when the harvest was harmed by drought, some of the villages gave up on the program²⁸.</p> <p>3. Dryland-farming improvement: In general, on the 5-point scale, dryland-farming improvement is a 3 (i.e., the medium level)²⁹. In some woredas, the agro-pastoralists purchased seeds at markets and continued the activities on their own. On the other hand, the activities stopped in other woredas because the harvest was failed due to repeated droughts³⁰.</p> <p>4. Livestock-market construction: The constructed livestock markets have been well-utilized. However, they have not been well-maintained³¹.</p>
Component 2	<p>Functioning and utilization status of the irrigation facilities: At the time of the ex-post evaluation of the 4 sites listed below, 1 was functioning well, and the other 3 were not functioning. The specific situations are listed below.</p> <p>1. Balidad: The facility was well-functioning and well-utilized.</p> <p>2. Ilan: The facility was not functioning as of April 2019³². However, it was partially functioning as of March 2019 (when 1 pump out of 4 was not functioning. For the field canals, 3 of 8 were not functioning. However, the generator was functioning³³).</p> <p>3. Godiray: The facility was not functioning (and has not been functioning for the last 6 months. Agricultural activities have stopped as a result. The main canals, generators, and pumps are not functioning and cannot be repaired because there is no mechanic who can fix the generators and because the machineries required for repairing the canals are not available.</p> <p>4. Hididole : The facility is not functioning (because of a flood that silted up the canals and covered the pump basement with sediment. The division boxes are also damaged.)</p>
Component 3	<p>Since the project's completion, the WII activities have not been conducted. The main cause is that the target farmers are poor, which means that it is not economical for an insurance company to develop, disseminate, and sell</p>

²⁷Interview with the implementing agency

²⁸Interview with the DAs

²⁹Questionnaire sent to the implementing agency

³⁰Questionnaire sent to the implementing agency and interview with the DAs

³¹Interview with the DAs

³²Interview with an officer from the Ministry of Agriculture who visited the site in April 2019

³³Observation by a local consultant at the time of the site visit and interview conducted with the Ilan WUA

	insurance without support from the Ethiopian government or a donor organization.
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As stated above, for Overall Goal 1, the project’s recommendations are referred in the process of formulating regional disaster-risk-management strategies, but they are not reflected in the strategy yet. On the other hand, as for the goal of decreasing drought damage by securing a certain level of income (Overall Goal 2), the achievement is limited because the outputs were not sufficiently continued after the project’s completion. Therefore, the project has achieved its overall goals at a limited level.

3.2.2.2 Other Positive and Negative Impacts

(1) Impact on the Natural Environment

At the time of the ex-ante evaluation, the impact on the natural environment was assessed as a B in accordance with the JICA Guidelines for Environmental and Social Considerations (issued in April 2010). The level of undesirable impact on the environment was assessed as not serious based on the characteristics of the sector and the area. According to the Ethiopian standards of that era, irrigation development of less than 500 ha was not a target in the Environment Impact Assessment (EIA). Hence, the counterpart government did not formulate a monitoring plan or implement environmental monitoring. In the planning stage, the Japanese expert team conducted an Initial Environmental Examination (IEE), and in the construction stage, it provided guidance to the contractor so that the environmental impact of the wastewater treatment would be minimal³⁴. According to the Ethiopian government, the appropriate environmental procedures were conducted³⁵, and no specific indication to require specific environmental consideration was observed.

(2) Impacts on Resettlement and Land Acquisition

There was no resettlement or land acquisition in any of the project’s components.

(3) Other Indirect Impacts

The following indirect effects were produced in addition to the other positive impacts.

Component 1(Borena, Oromia Region)

The communities rehabilitated their small reservoirs of their own initiative as part of the CBPs, which made it possible for them to store water for longer (e.g., water can be kept for 6 months instead of only for 2 months). This reduced the frequency with which the

³⁴Interview with the Japanese experts

³⁵Questionnaire sent to the Ministry of Agriculture

pastoralists needed to move in search of water³⁶. Moreover, this component was implemented using a participatory approach; in each community, the villagers discussed the content of the activities and what would be done on a priority basis, evaluated the schedule, made decisions and implemented as a group. Through this process, some of the villagers who used to be passive joined in the collaboration and changed their attitudes about completing the activities positively. It is pointed out that the communities' self-initiative and human networks were strengthened because of the pilot activities, as compared with before the project's commencement³⁷. In addition, the construction of the livestock markets led to an increase in tax revenue for the local government where the markets were constructed³⁸.

As for the impact on the other donor organizations' support, the project's participatory pasture management was reflected in the Drought Resilience and Sustainable Livelihoods Program Project-II(DRSLP-II), which was supported by organizations such as the African Development Bank. This project's target residents received a needs-assessment survey of DRSLP-II, according to OPADC, the implementing organization. Later, this led to a "fodder bank" (a system for harvesting pastures, packing the harvest in the shape of blocks, and storing those blocks for use in a drought in participatory approach). This idea was also inherited in the Regional Pastoral Livelihoods Resilience Project (RPLRP), which was supported by the World Bank and such.

Component 2(Gode, Somali Region)

In Component 2, there were some comments in a site where irrigation facility was functioning well, the livelihoods of the population there were improved by the increased production of agricultural crops. Thus, the number of jobless citizens and the number who had to leave town to earn money both decreased³⁹.

Component 3(Erratic-rainfall area, Oromia Region)

In Component 3 (for the erratic-rainfall area), regarding the meaningfulness of purchasing WII, awareness increased among the farmers in the target areas.

Common: Negative Impact

No negative impacts were observed. At the time of the ex-ante evaluation, attention was focused on avoiding negative impacts. Essential consideration was also given to not presenting the impression that the agricultural support involves forced resettlement of pastoralists and agro-pastoralists, as well as to not affecting the moving patterns of the pastoralists by constructing the reservoirs or inviting unexpected clan-based rivalries based on water-feeding. During the project implementation period, sufficient consideration was given to these points. Especially in Component 1, the project emphasized avoiding negative

³⁶Interview with DAs

³⁷Questionnaire to the implementing agency, Interview with DAs

³⁸Interview with DAs

³⁹Interview with Water User Association and the villagers

impacts by standing close with the pastoralists in Borena and learning their viewpoints⁴⁰.

As stated above, positive impacts were seen, but no negative impacts were observed.

Based on the above, the achievement of the overall goals is limited at the time of the ex-post evaluation. The production of outputs from the project's completion through the ex-post evaluation was also limited, although some were well-achieved. Thus, outputs did not sufficiently contribute to the achievement of the overall goals. On the other hand, positive impacts as other indirect effects were observed, and no negative impacts were seen. Therefore, the project's impact was at a medium level.

The project purpose was achieved because recommendations were made based on the 3 pilot projects, and these recommendations, consistent with the direction of enhancing resilience against droughts, were submitted by the project's completion. As for the achievement of the overall goals, although the project's recommendations were referred at the time when the regional disaster-risk-management strategy document is formulated, the production of the outputs did not sufficiently continue after the project's completion, which did not sufficiently contribute to decreasing drought damage by securing a certain level of income when drought occurs. Therefore, the project's effectiveness and impact are fair because certain effects by the project implementation were observed.

3.3 Efficiency (Rating: ②)

3.3.1 Inputs

The achievement of the inputs is shown below.

Table 5: Overview of the Project's Inputs

Inputs	Plan	Actual (at Completion)
(1) Experts	14 persons (180M/M): Team Leader/Rural Development, Water Infrastructure Design, Estimation/Procurement Support, Construction Supervision 1, Construction Supervision 2, Irrigation, Cultivation, Farming, Livestock Marketing/Livestock Farming, Institutionalization, Community Development/Enhancement of Administrative Capacities, Rural Risk Management, Environmental and Social Considerations, Coordination/Assistance for Institutionalization	29 persons (193.8M/M): Team Leader/Rural Development, Water Infrastructure Design, Estimation/Procurement Support, Construction Supervision 1, Construction Supervision 2, Irrigation, Cultivation, Farming, Livestock Marketing/Livestock Farming, Institutionalization, Community Development/Enhancement of Administrative Capacities, Rural Risk Management, Environmental and Social Considerations, Coordination/Assistance for Institutionalization

⁴⁰Interview with Japanese expert

(2) Counterparts	No specific number described	Ministry of Agriculture:5 persons, Oromia Bureau of Agriculture and Natural Resources: 7 persons, OPADC: 13 persons Somali Region Livestock, Crop and Rural Development Bureau: N/A (no reply)
(3) Equipment	Surveying vehicles	Surveying vehicles, shovels, pickaxes, hoes, axes, handcarts, etc.
Japanese Total Project Cost	1,100 million yen	1,394 million yen
Ethiopian Total Project Cost	No specific amount described	N/A

Sources: The ex-ante evaluation sheets, the Record of Discussions, the questionnaires sent to the implementing organizations, and materials from JICA

3.3.1.1 Elements of Inputs

Compared with 180 men per month (hereinafter, M/M), the figure that the dispatching experts planned for, the achievement was 193.8 M/M (108% of the planned value) which exceeded the plan. The experts' areas of expertise were the same as planned. As for the quality of the experts, the responsible organization (the Ministry of Agriculture) and the implementing organizations that replied to the questionnaires (the Oromia Bureau of Agriculture and Natural Resources and OPADC) answered each assessed the expert's quality as either 5 (very good) or 4 (good) on the 5-point rating scale. Hence, the quality, according to the implementing organizations, was high.

3.3.1.2 Project Cost

The project cost was analyzed based on the cost borne by the Japanese side, as the actual project cost borne by the Ethiopian side was not available. The planned cost for the Japanese side was 1,100 million yen, but the actual cost was 1,394 million yen (127% of the planned amount), which exceeded the plan. The major cause of this excess was the delay in the construction work on the irrigation facilities at Gode (Component 2).

3.3.1.3 Project Period

The project was planned to last for 3 years and 1 month, but the actual period, after the 9-month extension, was 3 years and 10 months (124% of the planned length), which exceeded the plan. The cause of this extension was the delay in the construction of the irrigation facilities at Gode. Because the final output in terms of the irrigation facility's construction was the same as planned, the extension cannot be said to have increased the outputs. The planned project duration, in consideration of the special situation at the site, was not sufficient mainly because information was lacking concerning how the

implementation of construction works in Gode (Component 2).

Also, some issues in the planning stage were pointed out, including a lack of consideration regarding limitations on the usage of vehicles due to the heightened security situation (which necessitated using flights or car convoys instead of individual cars), due to short period of planning. The initial plan involved 2 contractors undertaking construction work at 4 sites simultaneously, but they had to change to use only 1 contractor due to exceeding budget. However, the project period remained the same. In addition, the working habits in the Somali Region⁴¹ were not reflected in the planned period⁴². Some people on the Japanese side stated that, at the project's commencement, they had insufficient information, including on the awareness and customs of Gode's residents; many things turned out to be clear after the project started⁴³.

As for the situation at the implementation stage, the construction work on the irrigation facilities in Gode was delayed by more than 4 months. It is pointed out that the reasons for this delay are as follows: 1) delay in installation of construction machinery, at the site, 2) difficult access to the site due to heavy rain, 3) deterioration of the security situation, 4) difficulty in securing construction staff⁴⁴, and 5) problems of securing fuel due to shortages in the contractor's funds and the machinery's reduced functionality⁴⁵. The contract with the local contractor was canceled because the construction work had not been completed by the due date, in spite of 2 extensions. Consequently, the commissioned consultant conducted the direct implementation of the construction work to ensure that it was completed. Furthermore, in terms of equipment procurement, the contractor caused further delays by trying to procure equipment that differed from the specifications (i.e., products that were not genuine), so the procurement procedures had to be taken twice⁴⁶.

Regarding securing the construction staff mentioned 4) above, the residents of the 4 target sites were not accustomed to work because they only received emergency aid from the WFP. Therefore, many of them who were employed did not come to the site on time or quit quickly, which delayed the construction work. It was difficult to secure laborers at the site, so it was necessary to dispatch skilled workers and day laborers from the capital⁴⁷. Gode was 1,200 km away from the capital; the weather, climate, society, culture, and language were different from other areas in the country; and security was unstable, so workers such as

⁴¹Due to severe weather, it is the custom to take long breaks, which leads to shorter working hours per day. In addition, as the people wholly receive emergency aid from donor organizations, many of the residents are not accustomed to work as a labor, hence many of them get late for work or quit the job quickly as explained later.

⁴²Interview at Ministry of Agriculture

⁴³Interview with Japanese experts

⁴⁴1)–4) Final Report Summary 12/17

⁴⁵Questionnaire to Japanese experts

⁴⁶Final Report Summary 12/17, Interview at Ministry of Agriculture

⁴⁷Final Report P III-4-4

engineers and machinery operators dispatched from the capital quit and returned to the capital one after another from the initial stage after construction commenced. Forty workers returned to the capital within 6 months of the work's commencement⁴⁸. Moreover, after the construction's completion, the Shebelle Zone Office and the Gode Woreda Office, lower-level Ethiopian government organizations that were expected to be responsible for the facilities' operation and maintenance, refused to assume responsibility. As a result, it was handed over to the Gode Kelafo Irrigation Development Project Office⁴⁹, but the handover process took more than 4 months from the construction's completion. For this reason, the irrigation scheme was not operated by the Gode Kelafo Irrigation Development Project Office during the implementation period⁵⁰.

Large-scale construction work was not included in the project except for the irrigation facility construction in Gode. No equipment provision delays were observed except for those related to the irrigation facilities⁵¹.

Based on the above, the project's efficiency is fair, as both the project cost and duration exceeded the plan, although the outputs were achieved by the project's completion.

3.4 Sustainability (Rating: ②)

As mentioned in the Effectiveness and Impact section, the project's recommendations were referred to in the Oromia Region disaster risk management strategy formulation process (information on the Somali Region was unclear). However, the effects of decreasing damage due to drought by securing a certain level of income and so forth were limited.

3.4.1 Policy and Political Commitment for the Sustainability of Project Effects

The 2013 *Disaster Risk Management Strategy* remained valid at the time of the ex-post evaluation. Its direction, which is aimed at decreasing dependence on and expectations of emergency aid by encouraging attitudinal change and enhancing the resilience of people who are vulnerable to disaster risks,⁵² has been maintained. In addition, the PSNP (2005-) has

⁴⁸Final Report P III-4-4

⁴⁹The Gode Kelafo Irrigation Development Project Office (the current name is Shebelle Irrigation Development Project Office) is a lower-level organization of the Somali Region Basin Development Bureau responsible for the maintenance of irrigation facilities in the Gode area. The JICA Ethiopia Office and the project team recommended it as a handover organization for the following reasons: 1) the organization was established to maintain irrigation schemes in West Gode, South Gode, and Kelafo; 2) it can cope with the civil works required for this maintenance, such as fixing canals, because it owns construction machinery such as backhoes, loaders, graders, and dump trucks; 3) it can cope with the maintenance of pumping facilities, such as pumps, generators, and control panels; 4) the West Gode Irrigation Project's facilities, which were implemented at the same time as this project, were handed over to the office, and it maintains their irrigation scheme.

⁵⁰Final Report P III-4-23~PIII-4-26, Summary 12/17

⁵¹Questionnaire submitted to the implementing agency

⁵²National Policy on Disaster Prevention and Management 2.3.2 Specific Objective, 8. Definition of Key Words & Terminology

been maintained at the time of the ex-post evaluation. The Ethiopian government aims at becoming independent from the program's donors' support by 2025 and intends to manage the program independently⁵³. Moreover, the *Growth and Transformation Plan II* (hereinafter, GTP II) (2015/16-2019/20) positioned agriculture as a major sector which remains to be the economy's leading sector and stipulates that it aims at promoting irrigation agriculture, livestock development, and so forth⁵⁴. Therefore, sustainability in terms of policy and political commitment is high because enhancing the resilience of farmers, pastoralists and agro-pastoralists against droughts in areas prone to such risks is consistent with Ethiopian government policy at the time of the ex-post evaluation.

3.4.2 Institutional / Organizational Aspect for the Sustainability of Project Effects

The change in organizations and related institutions, as well as the prospects of realizing the recommendations, are as follows.

Component 1 (Borena, Oromia Region)

As an effect of the restructuring implemented by the Ethiopian government, there was a change in the discretion of the OPADC, the initial implementing organization. Its responsibility and discretion became focused on strategy development, research, and monitoring. With this change, the Oromia Bureau of Agriculture and Natural Resources became responsible for rangeland and pasture management, as well as dryland farming, whereas the Oromia Bureau of Livestock assumed responsibility for livestock-market construction⁵⁵. The Oromia Bureau of Agriculture and Natural Resources, which was Component 3's initial implementing organization, is aware of Component 1 and positively recognizes the restructuring as a move to avoid duplication and to create a one-stop operation. No confusion was perceived, as farming improvement is its inherent responsibility. The bureau established a new agricultural task force to update information on the effects of rainfall and drought including pastoralist areas such as Borena and strengthen the disaster risk management structure. The contents of the recommendations are shown in the Table 2. It may be possible to realize these recommendations and to enhance drought resilience by securing a certain level of income in the medium and long term because OPADC, which will formulate strategies and conduct monitoring, understands the project's history and assesses the RREP's approach highly. The Oromia Bureau of Agriculture, which will be responsible for rangeland management and dryland farming improvement, has sufficient experience in these activities.

⁵³<https://www.worldbank.org/en/news/press-release/2017/09/14/world-bank-to-help-ethiopia-build-a-national-safety-net-system-as-a-more-effective-response-to-droughts>

⁵⁴P78

⁵⁵Interview at OPADC

Component 2 (Gode, Somali Region)

The regional implementing organization's authority was transferred to the Somali Region Basin Development Bureau, which was restructured under the Somali Region Livestock, Crop and Rural Development Bureau (hereinafter, SLCRDB) after the project's completion. However, the Somali Region Basin Development Bureau does not possess the project's records and information because it was not involved in the project during implementation. Thus, the bureau recognized that it was not in the position to be involved in the ex-post evaluation⁵⁶. Hence, the completed questionnaire for Component 2's regional implementing organization could not be obtained⁵⁷. The status of these references and the reflection of the project recommendations in the formulation of regional strategies at the time of the ex-post evaluation is unknown, and the prospects of its being referred/reflected in future strategies are low. However, the Gode Kelafo Irrigation Development Project Office, to which the irrigation facilities were transferred and which was expected to fulfill a maintenance support role, was later renamed the Shebelle Irrigation Development Project Office, though the organization itself did not change. It has been involved in the maintenance of the irrigation facilities constructed by the project. The office has supported the maintenance of irrigation facilities since the project's completion, although there was limitation in terms of budget and human resources.

The major points of recommendations are described in Table 2. Among these, procurement and stocking of spare parts has been realized, but it might take considerable time for the many other recommendations to be realized because regional decision-making and initiative are required. The sustainability from the viewpoint of organizational structure needed to reflect Component 2's recommendations in the strategies and realize them is low because the regional implementing organization, which was expected to monitor and take measurements if necessary, has neither records and information nor a sense of ownership.

Component 3 (Erratic-rainfall area, Oromia Region)

The Oromia Bureau of Agriculture, which has been the implementing organization since the project's commencement, was renamed the Oromia Bureau of Agriculture and Natural Resources at the time of the ex-post evaluation and has been expanded as a result of its merger with other sections, but it has maintained its original function. Recommendations were made for the sake of promoting and extending WII as indicated in Table 2. In March 2019, the JICA technical cooperation project "Index-based Crop Insurance Promotion Project for Rural Resilience Enhancement" commenced based on the implementation of

⁵⁶Interview with the implementing agency

⁵⁷SLCRDB, which was the initial implementing agency, was divided into 2 organizations (i.e., Somali Region Livestock Resource and Pastoral Development Bureau and Somali Region Agriculture & Natural Resources Bureau) due to the restructuring. Efforts were made to collect information on the related section and its contact at the agricultural bureau above, which is responsible for irrigation, but this information was not available.

Component 2. The Oromia Bureau of Agriculture and Natural Resources hired a meteorology expert to prepare it⁵⁸. In addition, the bureau is highly motivated to utilize WII⁵⁹, and the recommendations could be realized to some extent in the medium and long term.

Common

The number of staff who worked from the implementation period until the ex-post evaluation was as follows: 4 for Component 1, unknown for Component 2⁶⁰, and 1 for Component 3. Concerning the status of taking over the job when staff is transferred or retired, information was transferred to their successors in Components 1 and 3 (for which completed questionnaires were returned from the implementing organizations). However, during the ex-post evaluation field visit, many key personnel had been transferred to other sections or retired (especially in Component 2, Component 3, and at the Woreda level), and information was not sufficiently transferred to successors.

As mentioned above, concerning the institution and organization aspects of the implementing organizations, no significant problems were observed for Components 1 and 3, but the regional implementation organization for Component 2 is virtually nonexistent. Thus, sustainability from the aspects of institution and organization is regarded as low.

3.4.3 Technical Aspect for the Sustainability of Project Effects

Component 1 (Borena, Oromia Region)

There are no technical problems related to continuing the pilot activities because the technologies for CBPs and rangeland management are simple and have been traditionally practiced by the pastoralists. This component adopted the RREP approach, which features participatory development and utilizes the target areas' traditional mutual support system to enhance sustainability from the planning stage. Thus, the project opted not to pay for the community's activities⁶¹. This led to community ownership and high sustainability. However, most of the hand tools necessary for these activities, such as shovels and handcarts, are already broken and have not been replaced, so it cannot be expected that the same activity level as during the implementation period are maintained. In the target areas, there is also no specific problem in terms of the trained DAs' skills, but further DA training will be required if the area is expanded in accordance with the recommendations. In addition, concerning dryland farming improvement, which was a new technology for the pastoralists⁶², sufficient skills may not have been acquired depending on the target area. Although the position of dryland farming improvement in Component 1 is not large, this point presents

⁵⁸Interview at Oromia Bureau of Agriculture and Natural Resources

⁵⁹Interview at Oromia Bureau of Agriculture and Natural Resources

⁶⁰Because completed questionnaires were not acquired, as explained above.

⁶¹Interviews with Japanese experts

⁶²Interviews with DAs

minor concerns in terms of sustainability.

Component 2 (Gode, Somali Region)

With regard to the technology for policies and implementation of recommendations, policy-making capacity, coordination of opinions among concerned parties, and decision-making are essential for the clarification and presentation of long-term policy to shift from emergency aid to development assistance, community awareness promotion, changing policies regarding free rental of construction machinery owned by the Ethiopian government for maintenance, and fostering local irrigation agriculture experts, and so on. However, as explained in the Institutional / Organizational Aspects section, there is no recognition of Somali Region Basin Development Bureau, to which the function was transferred from SLCRDB, that enabled it to monitor the project and act when necessary, and no support was provided for this evaluation study. Thus, it is difficult to assess the extent of the necessary technology. However, the Shebelle Irrigation Development Project Office has supported the facilities' maintenance since the project's completion. Although it has begun to procure and store spare parts in accordance with recommendations, its senior electrical and mechanical engineers insufficient⁶³.

Moreover, there are no local mechanics who can fix generators, so the irrigation facilities stop functioning once a generator is damaged because it cannot be repaired. Also, it was pointed out at some sites that, the construction machinery required for repairing canals was unavailable or could not be mobilized when a canal was damaged⁶⁴. Therefore, the irrigation facilities at 3 out of 4 sites are not functioning, as explained in the impact section. After the budget for fiscal year 2018 was allocated to the Shebelle Irrigation Development Project Office, however, maintenance work began, and the office's large machinery assets were mobilized in Ilan (one of the 3 project sites where the facilities are not functioning). Hence, improvement toward functional recovery is expected at that site. The office is considering to invite an engineer who can fix a generator from the capital, which has not been realized yet at the time of the ex-post evaluation.

As a rule, routine maintenance is performed by the villagers at each project site through the WUA, which plays a central role. However, generators were frequently damaged due to mechanics and pump operators' insufficient maintenance skills. Consequently, the irrigation systems stopped functioning. To cope with this, the JICA Ethiopia Office conducted a 7-day training course⁶⁵ at Gode on operating and maintaining electrical machinery in November 2018 (i.e., 3 years after the project's completion). According to the JICA Ethiopian Office's report, most participants attended all the sessions and acquired skills and knowledge,

⁶³Questionnaire sent to and telephone interview with the Shebelle Irrigation Development Project Office

⁶⁴Interviews with WUAs and interviews with agro-pastoralists

⁶⁵Electromechanical Equipment and Machineries Operation and Maintenance Training Course

especially through the demonstrations and works at the site⁶⁶.

To cope with flooding, the project adopted a system for dismantling the pump and motor so they could be evacuated to a hill. According to third-party irrigation agriculture experts, this might cause the pumps to malfunction unless centering is performed by an expert in mechanical engineering after dismantling and assembly⁶⁷. The project knew this, but it adopted the above option to cope with the reality at the project sites to facilitate evacuations during floods.

As for the other technology necessary for continuing the pilot project's effects, the site is inherently pastoralist dominant, and the people gave up living as pastoralists to live as agro-pastoralists. During the project, in addition to the construction of irrigation facilities, irrigation agriculture training was conducted at Gode for agro-pastoralists who were scheduled to utilize the irrigation facilities. However, some comments were overheard to the effect that the training and the DAs' skills were insufficient⁶⁸. Concerning the increase and capacity enhancement of local private-sector and NGO agriculture experts for the future development of irrigation agriculture in Gode, it is difficult to increase the number of human resources on a private-sector basis because few people wish to become agriculture experts. The capacity enhancement incentive does not work because many donor organizations continue to provide emergency aid and have not shifted to development assistance⁶⁹. Based on the above, sustainability is low in terms of the technology required to realize the recommendations and decrease damage from drought by securing certain income levels.

Component 3 (Erratic-rainfall area, Oromia Region)

Regarding the technology of related organizations on WII, it is considered that the Oromia Insurance Company, cooperative unions, and DAs with whom the project collaborated are equipped with knowledge and skills related to extending insurance, collecting premiums, and providing insurance payouts. As for the WII development supported by other donor organizations, the insurance is designed by university professors as such from developed countries. According to the Japanese experts involved, the Oromia Insurance Company's knowledge improved as a result of the pilot activity training, and the Oromia Insurance Company might design the WII as long as satellite data can be obtained. However, the Oromia Insurance Company recognized that it would take time for the company to design WII independently⁷⁰. The technical recommendations for WII extension will probably be utilized in the implementing process of the subsequent technical cooperation project, which was explained in the Institutional / Organizational Aspects

⁶⁶Document provided by JICA

⁶⁷External experts (irrigation agriculture in Africa)

⁶⁸Interviews with WUA and villagers

⁶⁹Interviews with the Japanese who were involved in the implementation

⁷⁰Interview at the Oromia Insurance Company

section, in other project sites in the Oromia Region. But maintaining the continuity of effects at the project sites is difficult⁷¹.

Based on the above, minor problems have been observed in the technical aspects of Components 1 and 3. There are also concerns about the technology of the organization responsible for maintaining the facilities, as well as the DAs' technology in Component 2. Therefore, sustainability from technical aspect is as medium.

3.4.4 Financial Aspect for the Sustainability of Project Effects

Component 1 (Borena, Oromia Region)

Financial data could not be obtained from the Oromia Bureau of Agriculture and Natural Resources. Although many of the provided tools, such as shovels and handcarts, were already broken at the time of the ex-post evaluation, it is difficult for the implementing organization, the Woreda Office, and the pastoralists to bear the cost of replacing them⁷². However, the CBPs' activities have been continued.

Component 2 (Gode, Somali Region)

Financial data could not be obtained from the Somali Region Basin Development Bureau, the implementing organization. However, the budget of the Shebelle Irrigation Development Project Office (Table 6), the organization responsible for maintenance, has been stable since fiscal year 2014. Concerning the Gode irrigation facilities' fuel and maintenance costs, the WUA is in a position to collect fees from its members. The Shebelle Irrigation Development Project Office also bears some maintenance costs, but the amount is not necessarily sufficient. However, the budget for fiscal year 2018 was allocated in April 2019, and the project secured 120,000-150,000 Ethiopian birr for the maintenance of irrigation facilities of the project at 4 sites in Gode⁷³. This budget can almost cover the necessary amount⁷⁴, considering the irrigation facilities' operating status at the time of the ex-post evaluation.

⁷¹As a subsequent technical cooperation project, "Index-based Crop Insurance Promotion Project for Rural Resilience Enhancement," began in March 2019 and will last 5 years. Its target area is also the Oromia Region, but there is no duplication of target sites. In addition, Geodata for Innovative Agricultural Credit Insurance Schemes (GIACIS), which is supported by the government of Netherlands and Kifia, a private Ethiopian company, was implemented in 4 regions, including the Oromia Region. However, this project's duplication of the target sites was limited to 9 villages in Adami Tulu Woreda. GIACIS was terminated in 2018, and the insurance has not been sold since then.

⁷²Interview with the implementing agency

⁷³Telephone interview with the Shebelle Irrigation Development Project Office

⁷⁴Interview with the Japanese experts

Table 6: Budget of the Shebelle Irrigation Development Project Office

(Unit: Ethiopian birr)

	2014/15	2015/16	2016/17	2017/18	2018/19
Budget	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000
Expense	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000
Balance	0	0	0	0	0

Source: Questionnaire sent to the organization responsible for maintenance and telephone interview with that organization

Component 3 (Erratic-rainfall area, Oromia Region)

Financial data could not be obtained from the Oromia Bureau of Agriculture and Natural Resources. For an insurance company that aims to reach the break-even point for continuously implementing WII after the project's completion, the target farmers' low income and the huge cost of sales promotion, which make it difficult to implement on a commercial basis, become bottlenecks for continuing and expanding activities after the project's completion. Because this project also stopped short of overcoming these difficulties at the time of the ex-post evaluation, it will be difficult to secure future sustainability at the target sites. However, a certain project implementation budget will be secured for the target sites of the technical cooperation project, which commenced in the Oromia Region based on the result of this project toward resilience enhancement for farmers through insurance.

Thus, although the financial information is generally insufficient, future financial sustainability is fair based on the information available.

Based on the above, although sustainability in terms of policy/political commitment is high, some major problems have been observed in terms of the institutional/organizational aspects, while minor problems have been observed in technical and financial aspects. Therefore, sustainability of the project effects is fair.

4. Conclusion, Lessons Learned and Recommendations

4.1 Conclusion

This project was implemented to make recommendations based on the implementation of 3 pilot projects; 1) water-access improvement, rangeland management and pasture production, livestock-market construction, dryland farming improvement, and so on; 2) construction of irrigation facilities and such; and 3) the development of weather index insurance and others, thereby contributing to referring/reflecting the recommendations in the formulation of disaster-risk-management strategies in the regions as well as decreasing the damage from droughts in the target areas. Its relevance is high because the project direction aimed at the abovementioned objectives in areas where the drought damage is serious is

consistent with Ethiopian policies, development needs, and Japan's aid policy. Its effectiveness is high because the 3 pilot projects were implemented almost as planned and because, based on the results, the recommendations for enhancing the target group's resilience were submitted by the project's completion. The level of achievement for the overall goals is medium, as the recommendations based on the pilot projects were referred when regional disaster-risk-management strategies were being formulated, whereas decreases in drought damage by securing a certain level of income were not sufficiently achieved. On the other hand, positive indirect impacts appeared, such as improved quantities of water secured at rehabilitated ponds, while no negative impacts were observed. Thus, the effectiveness and impact are assessed to be fair. The efficiency is fair because both the project cost and project period exceeded the plan, although the project outputs were achieved by the project's completion. The sustainability of the project's effects is also assessed as fair because of institutional/organizational problems and some partial technical and financial problems, although sustainability in terms of policy and political commitment is high. Therefore, the project is assessed to be partially satisfactory.

4.2 Recommendations

4.2.1 Recommendations to the Implementing Agency

Regarding Component 2's irrigation facilities, the Shebelle Irrigation Development Project Office should take immediate supportive action to maintain and rehabilitate the irrigation facilities by repairing the nonfunctional generators and pumps and damaged canals. For the above, the office should invite an engineer from the capital as needed.

4.2.2 Recommendations to JICA

If it is difficult for the above organization to invite an engineer from the capital, JICA should dispatch an engineer from the capital for support. It may be possible to collaborate with Ethiopian Water Technology Institute, which is supported by JICA through the "Project for Strengthening Capacity for Training Operation and Management for Ethiopian Water Technology Institute," which also supported JICA Ethiopia Office in providing site training after the project's completion.

4.3 Lessons Learned

Importance of information collection at the planning stage for instances of technical cooperation for emergency development planning that include infrastructural development

The project was implemented before sufficient information was collected during the planning stage on the irrigation facility construction in Gode, because urgency was emphasized. This resulted in the extension of the project's duration due to the problems

which occurred during implementation, as explained in the efficiency section. When irrigation facilities and so forth are constructed, as a part of technical cooperation for emergency development planning, it is necessary to strengthen information collection in advance, compared with other emergency types of the same scheme. Especially in areas where emergency aid is mainly provided and other donor agencies rarely engage in development assistance, unexpected troubles that delay activities or increase costs are likely to occur after a project's commencement. In the technical cooperation for emergency development planning that includes infrastructure development, it is essential to start a project only after collecting as much information as possible on the number and level of available engineers and basic information about the related organizations, characteristics and working habits of the target population, and so forth during the planning stage and examining the project's plan beforehand to avoid delays in implementing pilot activities and enhance sustainability.

Points to be kept in mind when components are combined into a single project

Concerning the construction of the irrigation facilities in Gode, the project's duration was fixed without making it longer during the planning stage, even after the expected number of contractors decreased from 2 to 1 because it would exceed the secured budget. In the original plan, 2 contractors were supposed to implement construction work simultaneously for covering 4 sites. Suppose Component 2 were an independent project, it might have been implemented for longer period, without any relation to the expected project duration for Components 1 and 3. The project's 3 components are similar in that they are aimed at enhancing resilience in rural areas, but their activities were not substantially related, so there would have been no problem even if they were conducted separately. When multiple components are combined into a single project, the extent to which the activities and effects are substantially connected should be assessed. If there is no substantial connection, they should not be forcibly combined, but should be independent projects if necessary.