

Summary Results of Terminal Evaluation Study

1. Outline of Project	
Country: Pakistan	Project on Sustainable Livestock Development for Rural Sindh
Sector: Agriculture	Scheme: Technical Cooperation Project
Division in Charge: Rural Development Department	Total Cost:
Period of Cooperation From February 2014 to February 2019	Implementing Organization: Department of Livestock and Fisheries, Government of Sindh, Islamic Republic of Pakistan
	Supporting Organisation in Japan:
1.1 Background of the Project	
<p>In Pakistan, livestock sector contributes 50% of total agricultural production and 10% of national GDP. Pakistan holds one of the largest numbers of livestock population in the world. Livestock plays an important role for small-scale farmers, including tenant and landless farmers, as daily/emergent sources of nutrition supply and income as well as invaluable assets. Livestock development is also crucial for the creation of employment opportunity and the facilitation of social participation of women since they have been traditionally engaged in management of livestock in rural area.</p> <p>Sindh Province holds 14 million cattle and buffaloes, 3.2 times bigger than those in Japan. The province holds Karachi, the largest commercial town in the country, is an exporting hub port toward the Middle East and Asia. These are regarded as comparative advantages and potentials for the development; however, Sindh livestock sector has been overlooked mainly due to the concentration of public services and investment on Punjab Province.</p> <p>Since small-scale farmers occupy 80% of the livestock farmers in Sindh Province, the Sindh livestock sector development particularly for the small-scale farmers needs to draw more attention for the remedy of socio-economic disparity among the people and the stability as well as the development of the areas. However, the organizational structure and services of Sindh Livestock Department have been focusing mostly on disease control of livestock by the veterinarians, derived from the British colonial era. That prompts lack of consideration on capacity development of human resources for neither livestock development as an industry nor service for farmers. The Department has yet to have a clear vision for public-private partnership or implementation structure. Furthermore, the farmers have been traditionally applying primitive livestock rearing technologies, which leads to low productivity and failure to draw livestock potentials</p> <p>Under these circumstances, the Japanese government supported in conducting “the Project for the Master Plan Study on Livestock, Meat and Dairy Development in Sindh Province” (M/P study) from July 2010 to July 2011. As a result, the livestock development strategy through to 2020, the M/P and action plans were formulated. To realize the M/P, the Government of Pakistan submitted an official request for implementing a technical cooperation project to the Government of Japan. Based on the request, the Project on Sustainable Livestock Development for Rural Sindh (“the Project”) was formulated and has been implemented since February 2014 scheduled to complete in February 2019.</p>	
1.2 Summary of the Project	
(5) Overall Goal	
The appropriate technologies and the methods for utilizing livestock resources are adopted by the farmers in and outside the pilot districts.	
(6) Project Purpose	
The foundation for increasing incomes and assets of livestock farmers is built up in the pilot districts.	

(7) Expected Outputs

- 1) The appropriate technologies and management for livestock development are established through on-farm application at the pilot farms.
- 2) The methods for utilizing livestock resources are verified.
- 3) The verified appropriate technologies and the methods for utilizing livestock resources are disseminated in the pilot districts with gender consideration.
- 4) The capacity of the Livestock Department for project planning, management, and coordination is strengthened.

(8) Inputs

From Japanese Side:

- 1) Dispatch of Experts: A total of 19 Japanese experts in 15 technical fields and a third country expert from Bolivia have been assigned.
- 2) Overseas Training: Three training courses were undertaken; two in Japan and one in Thailand.
- 3) Provision of Equipment: Equipment approximately valued at Rs. 10.98 million (equivalent to JPY 11.50 million) have been procured and provided for the Project.
- 4) Operational Cost: A total amount of around Rs. 143.48 million (equivalent to JPY 159.42 million) was spent during the period from February 2014 to March 2018.

From Pakistan Side:

- 1) Counterpart (C/P) Personnel: A total of 13 officers have been assigned to the Project, out of which 9 officers are full-time counterparts.
- 2) C/P funds: A total amount of Rs. 234.88 million (for 5 years) has been approved by the Sindh government, out of which Rs. 125.29 million has been utilized.
- 3) Facilities and Equipment: Project offices, Calf Salvation Centre, laboratories at Poultry Research Institute (PRI) and Central Veterinary Diagnosis Laboratory (CVDL) etc. have been provided.

2. Evaluation Team

Japan	Leader	Dr. Tomoko Taira	Director, Team 1, Group 1, Rural Development Department, JICA
	Cooperation Planning	Ms. Chisa Togo	Assistant Director, Team 1, Group 1, Rural Development Department, JICA
	Animal Health	Dr. Masaharu Kanameda	Senior Advisor (Livestock), Rural Development Department, JICA HQ
	Evaluation Analysis	Mr. Atsushi Suzuki	Senior Consultant, A&M Consultant Co., Ltd.
Pakistan	Leader	Dr. Parkash Dewani	Director, Central Veterinary Diagnostic Laboratory
	Member	Dr. Muzaffar Ali Vighio	Director, Directorate General of Livestock (Extension & Research)

Period of Study: August 25 to September 9, 2018

Type of Evaluation: Terminal Evaluation

3. Results of Evaluation

3.1 Achievements of Project Outputs (Achievement level was assessed with 5 grades; namely, 1) high, 2) moderately high, 3) moderate, 4) moderately low and 5) low.

- (1) **Output 1:** The overall achievement of Output 1 at the end of the Project is projected to be high. Focusing on 7 technical fields identified, the Project Team has undertaken quite a number

of verification activities at pilot farms (P/Fs) in 5 pilot districts, involving various stakeholders both in public and private sector. By improving livestock management practices of P/Fs, average milk yield and daily gain of their buffaloes had doubled, which means that the targets set as indicators have been achieved. Besides that, all the C/Ps have obtained sufficient skill to instruct livestock technicians including extension workers and veterinarians both in private and public sector.

(2) **Output 2: The overall achievement of Output 2 is projected to be moderate.**

For methods for utilizing livestock resources, the Project has been focusing mainly on 2 technologies; namely, salvation of buffalo calves and recycling of dry buffaloes. As for salvation of buffalo calves, the survival rates of calves had reached more than 90% at the Calf Salvation Centre established by the Project, the target indicator had been achieved and the technology has been verified. Regarding recycling of dry buffaloes, the Project team demonstrated on improved reproductive techniques at a farm in the Hyderabad cattle colony in which the conception rates of dry buffaloes were shown to be improved after the treatment.

On the other hand, the calf salvation methods the Project has developed require a certain amount of initial investment which has been one of the major challenges for the technologies to benefit small-scale farmers broadly. In this sense, the technologies have not yet been proven to be 'economically' viable. To deal with the challenge, it could be one way to find and collaborate with donor/charity organizations to adopt the technologies as the Project team has been doing with an NGO in Karachi. The efforts need to be continued to identify similar organizations so that the useful technologies can benefit more farmers across the province. However, it is unknown at this stage as to what extent it will materialize by the end of the Project.

(3) **Output 3: The overall achievement of Output 3 is projected to be moderate.**

All the extension teams that had been delayed in the first 2 years have been deployed to all the 5 districts with required means and resources such as transport and fuel, which has enabled them to carry out farmers' training in the pilot villages as originally planned. As a result, more than 2,500 farmers had directly benefited through the training with gender consideration within 2 years.

On the other hand, to what extent the technologies provided to the farmers will continue to be utilized in daily work is not known at this stage as the monitoring of farmers has just started in the 24 pilot villages. Furthermore, it is assumed that dissemination of technologies from farmers to farmers will take place through the core farmers, but it is difficult to project as to what extent it will materialize.

(4) **Output 4: The overall achievement of Output 4 is projected to be moderate to moderately high.**

Due to regular training on project management supported by the Project, number of officers who recognize its importance for department work has gradually increased. 2 officers have been assigned on full-time basis to the CBU office by the Department, which could be seen as a sign of the official recognition. The Project team has prepared and submitted a proposal on restructuring of the Department, consisted of strengthening CBU and Directorate of Planning and Monitoring together with establishment of extension structure to the Secretary of the Department. The proposal has been accepted by the Secretary, but since realization of this kind of reorganization requires approval of higher authorities, it is not known as to how feasible it is at this stage.

(5) **Project Purpose**

The overall achievement of Project Purpose at the end of the Project is projected at moderate to moderately high level since the achievement of the Indicators is projected as follows:

Indicator 1	As the baseline data was not collected in the target villages before the training took place, it is not possible to examine changes or impact after the training.
Indicator 2	As actual action has not been taken; this Indicator is not achieved yet, but it is projected to be achieved by the end of the project.
Indicator 3	Since some stakeholders who have started using technologies/methods of salvaging buffalo calves and dry buffaloes, this Indicator can be regarded as having been achieved.
Indicator 4	Since the likeliness of achieving all the targets is quite high, the Indicator is highly likely to be achieved by the end of the Project.
Indicator 5	It is difficult to project the achievement level of this Indicator, but response of the management officers is observed rather positive as a whole, the achievement level would be moderately high.

3.2 Summary of Evaluation Results by Five Criteria

(1) Relevance has continued to be high.

- The policy environment for the Project at both central and provincial level has not drastically changed from the time when the Project commenced in 2014. Both of Pakistan and Sindh governments have put a great emphasis on the development of livestock sector in the socio-economic development policies. "Pakistan Vision 2025" and "Sindh Vision 2030" have been overall development policies at the federal and provincial level, in which development in the livestock subsector including dairy, meat and poultry has been focused on.
- Sindh Province has more than 14 million cattle and buffaloes; therefore, rearing cattle or buffaloes on farms is so common among the majority farmers. Livestock products particularly milk and meat are important source of nutrition as well as income for the farmers in the province. The Project has focused on the development and extension of appropriate technologies that are suited for the small-scale farmers in the province. As such, local needs for the Project have continued to be high.
- The assistance policy of Japanese Government for Pakistan has not been changed from the time of the Project formulation. The Project has been placed in the rural economic development programme in the Japan's Official Development Assistant (ODA) programme for Pakistan and the JICA's annual plan. Hence, the Project has been well aligned to the Japan's foreign assistance policy.
- Livestock products particularly dairy products are one of the important food for the Japanese people as well. Japan has a long history of dairy farming and has developed the most advanced production system in the world. Hence, Japan has comparative advantage to implement the technical cooperation project to contribute to the dairy sector in Pakistan.

(2) Effectiveness is regarded as moderate to moderately high.

- All the four Outputs are important and essential to realize the Project Purpose. Delay in assignment of new staff for extension activities and procurement of some essential equipment had greatly affected the progress of activities particularly for Output 3 in the first 2 years. While the situation has substantially improved after the extension teams were assigned to the 5 pilot districts from the mid-3rd year, its influence on the achievement of Project Purpose may remain until the end of the Project. Besides that, some indicators of Outputs may not be fully achieved by the end of the Project. Therefore, the achievement level of the Project Purpose is prospected to be at moderate to moderately high level.
- The logic between Outputs and Project Purpose in the PDM is considered generally good. In the questionnaire, the majority of the Project members answered that appropriateness of overall design of the Project was 'high' or 'substantial', which Indicated that effectiveness of

the Project in terms of the design has been regarded as good. There is, however, a problem regarding the 1st Indicator for Project Purpose in the current version of PDM as the baseline data was not collected. There is the same problem regarding the 2nd Indicator for Overall Goal as well; therefore, the Evaluation team recommends these Indicators be reviewed.

- Some villages in the target area had substantially hit by serious drought particularly in the current season; therefore, the important assumption identified at the beginning has affected the achievement of the Project Purpose.

(3) Efficiency is regarded as moderate.

- Assignment of C/P personnel, provision of equipment and facilities including office space for the Project team, lab facilities at CVDL and PRI, and disbursement of C/P funds for local expense were the major inputs from Sindh Government. 9 offices have been assigned to the Project on full-time basis. Some Inputs have not been provided on time, which has substantially affected the implementation of the Project from time to time. Hence, the efficiency of Inputs from Sindh Government has not been very high.
- Inputs from JICA for the implementation of the Project included dispatch of Japanese experts and a third country expert, provision of equipment, technical training in Japan and Thailand for C/Ps and local expense. All the inputs have been provided mostly as planned which has contributed to enhanced efficiency of the Project. Some equipment provided to feed analysis lab at PRI and milk analysis lab at the department building had not been fully utilised at the time of MTR study, which has been rectified thereafter and most of them have become operational by the time of Terminal Evaluation.
- It is difficult to conduct a thorough cost-benefits analysis on the Project; however, a certain level of positive results are anticipated since appropriate technologies and improved capacity of Livestock Department have great potential to benefit the livestock farmers broadly not only in the pilot districts but also those across Sindh Province.
- The important assumption from activities to Output level identified at the beginning of the Project had really affected the progress of the Project since some inputs from Pakistan had delayed in the first 2 years.

(4) The positive impacts are anticipated at the moderate level.

- If the Project Purpose is achieved by the end of the Project, the Project will have impact on the Overall Goal. Impact of the Project on the Overall Goal will, however, depend on whether the Livestock Department is able to materialize its restructuring that the Project team has proposed. Establishment of an extension structure is a precondition to reaching more farmers across the province and realize the Overall Goal.
- Livestock production is an important source of food and income for most farmers in Sindh. As the aim of the Project is to support farmers in improving their technologies for livestock management, it is anticipated that the Project will bring about positive impact on their livelihood on a large scale. It is observed that some technologies promoted by the Project have already started spreading to the areas beyond the pilot districts.
- Any negative impact has been caused by the Project so far and is not anticipated in the future.

(5) Overall sustainability is projected to be moderate.

Policy and institutional aspect

- The Project has been implemented in accordance with the government overall development policies. As far as the current policies are not changed dramatically, the sustainability of the Project outcome will be maintained at the same level.

- Since the special directorate for extension does not exist in the current structure of the Livestock Department, it is essential to establish it so that the department can continue extension services. A lot of people not only beneficiary farmers but also the department staff have come to recognize its importance as a result of the Project. This is a good sign towards the realization of establishment of extension structure in the department. If it is realized, the institutional sustainability would be secured. Capacity of the relevant officers enhanced through the Project will also contribute to boosting the institutional sustainability.

Financial aspect

- While many activities have been carried out with financial support from JICA, the Livestock Department has been making efforts to secure C/P budget by applying for PC-I funds. Sindh Government has allocated a total amount of Rs.234.9 million for the Project, out of which about 50% has been utilized. If the government maintains the current level of budget disbursement, the sustainability in financial term would be secured. However, since the PC-I budget is only allocated during the project implementation period, alternative source of budget is required after the Project phases out. In this regard, there is possibility for some of project activities can be incorporated into regular work of the Department by applying to PC IV, but it is still not certain about the level of financial sustainability of the Sindh government.
- On the other hand, the financial sustainability at farmers' level will be secured to a certain extent. According to the interview with farmers, the milk production had increased by using some technologies they learnt from the Project. If the technologies can bring about economic gains or visible impact to the farmers, they will continue to use them even without much support from the Project or the government.

Technical aspect

- Knowledge and skills equipped with the C/Ps and extension team members will assist them in carrying out their work as far as they continue to work in the department or the livestock sector. The Evaluation team has observed that most of them are highly motivated and have positive attitude towards their work. It is certain that they will utilize what they learnt through the Project.
- Technologies transferred to the farmers will also help them in improving their livestock management for a longer period. Many farmers have appreciated the technologies learnt through the training organized with support of the Project. Therefore, a good level of sustainability can be expected regarding the technical aspect; however, it is important for the department to continue support them as it usually takes long time for farmers to change behaviours and adopt new technologies.

3.3 Contributing and prohibiting factors to the project implementation

The following factors have been contributing to the smooth implementation of the Project:

- 1) A good collaborating relationship has been established in the Project team through frequent and effective communication between members.
- 2) The expert team has high level of understanding regarding the local conditions of livestock sector as some members have continuously been engaged in the JICA project since the time of the Master Plan study.

On the other hand, the factor that has negatively affected the implementation process and countermeasure are as follows:

- 1) The delay in recruitment of new officers and procurement of some equipment has negatively affected the implementation process.
- 2) Some villages in the target area had substantially hit by serious drought which resulted in shortage of roughage for ruminant animals.

3.4 Conclusion and Recommendations

The Joint Terminal Evaluation Team has conducted a series of study that included field visits and interviews with government officers, beneficiary farmers, extension teams and other stakeholders concerned with the Project, and collected information necessary for the evaluation. The progress and performance of the Project were assessed and evaluated with five evaluation criteria. Consequently, it is confirmed that the Project has been implemented as planned with good collaboration between Sindh C/P officers and Japanese experts. While the Project has faced a number of challenges in the implementation process, it could solve them with efforts made by the Sindh and Japanese sides. Based on the results of the study, the Evaluation team has concluded that while most Indicators are to be achieved at satisfactory level, some of them cannot fully be achieved by the end of the Project. Therefore, achievement level of Outputs as well as the Project Purposes are prospected to be moderate to moderately high by the end of the Project in February 2019.

According to the results of monitoring on utilization of the appropriate technologies in the pilot villages, the adoption rates of most technologies were shown higher than expected according to the interview. While it is a good sign, it is yet important for the Project/the Department to continue the monitoring of farmers' practices and provide technical advice as a follow-up for the constant application. This is because it usually takes a long time for farmers to adopt new technologies.

Under this situation, the Evaluation team recommends that the Project implementation period be extended until June 2020 with a condition that one-year extension of PC-I budget until June 2020 for the Project is approved by the Sindh Government. Because the farmers' training and monitoring in the pilot districts should be continued to cover at least one to two lactation period, the extension activities emphasizing on the monitoring and follow-up should be continued by the Department. By the end of the extension period, the Department needs to complete the procedures to internalize the extension services into the proposed structure (restructuring) by regular allocation of the budget based on PC-IV. As for the assistance by the Japanese experts, they will only quarterly visit the Project site to give advice from February 2019; therefore, the Sindh Government has to take an initiative on the activities of the Project by securing human resources and budget. In this context, the Terminal Evaluation team makes the following recommendations aiming at enhancing the sustainability of outcome of the Project.

A. Necessary Measures to be taken by the Project

- (1) Output 1: C/Ps are expected to continue their efforts to improve the appropriate/basic technologies for the better use by small scale farmers, and to train junior staff who are existing and newly recruited VOs to become their successors/collaborators in the technical fields.
- (2) Output 2: Continuously conduct further trials on the system of the salvation of buffalo calves and the recycling of dry buffaloes to establish an economically-viable model for the purpose of increasing income and asset of small-scale farmers.
- (3) Output 3: Continue training for the extension team by devising effective teaching methods to develop their capacity in order to mitigate the existing gaps of understanding level among the extension team members as well as to increase their understanding.
- (4) Output 4: Continue capacity development training on project management for the Livestock Department officers so that the Department may be able to plan/do/check/act the projects properly and sustainably.
- (5) Publicity activities: Disseminate widely the guidelines/textbooks developed as the outcomes of the Project before the end of the Project, through various means such as website of the Livestock Department, Platform meeting, the national level seminar, radio/TV, and video shooting.
- (6) Revision of PDM: Revise the PDM (Version 3) for the clarification and modification of Indicator 1 of Project Purpose and indicator 2 of Overall Goal.

B. Necessary Measures to be taken by Livestock Department

- (1) Obtain approval on appointment of the Project Manager
- (2) Assure a smooth approval of disbursement/release/expenditure of the revised PC-I budget by relevant authorities without delay.
- (3) Complete the approval of one-year extension of the revised PC-I (second revision) by March 2019 and the preparation of PC-IV proposal by March 2019 based on the Pakistan's initiative.
- (4) Obtain approval on restructuring of the Department as proposed by the Project.
- (5) Until the completion of the restructuring of Livestock Department officially, the existed Directorates such as Directorate of Animal Husbandry and the Directorate of Animal Breeding should be considered as the directorates in charge of extension and breeding respectively.
- (6) Notify and implement the SOPs and all guidelines produced by the Project as official documents/procedures.
- (7) Officially regulate the management of proceeds by establishing a special revolving fund account from the Project's calf sharing before the sale.
- (8) Publicity activities

C. Necessary Measures to be taken by the P&D Department

- (1) Secure the disbursement of PC-I budget for the Project until its termination in order to operate each activity of the Project according to the plan.
- (2) Complete the approval of one-year extension of the revised PC-I budget by March 2019 and the approval of PC-IV and ensure the regular budget by March 2020.
- (3) Obtain approval on restructuring of the Department as proposed by the Project for enhancing the sustainability of the Project, as well as the approval on regularization of the staff recruited by revised PC-I budget.

3.5 Lesson Learnt

Consider the collaboration with private sectors to secure the sustainability of the Project activities.

The collaboration of the private companies/technicians for the production of the necessary inputs of the Project during the Project period is essential for the cases of the purchase of formula feed, iron pipe for retainer, concrete slab for the dry floor and so on. It was very effective not only for obtaining goods as the Project's request but for the sustainability for the farmers to buy those materials whenever necessity arises.