

Country Name	The Project on Eco-environment Rehabilitation and Poverty Reduction in Yanmenguan Region,
People's Republic of China	Shanxi Province

I. Project Outline

Background	Yanmenguan Region, Shanxi Province, is located in the Loess Plateau in the Northern China. It is a region of arid sandy terrace where rain-fed farming is the major style of agriculture and poor population is concentrated. In lands where reclamation reached to mountain summits, soil eroded after every heavy rainfall in summer, and this reduced land productivity further accelerated poverty. In 2001, the Shanxi provincial government proposed the Yanmenguan Ecological Livestock Economic Zone Construction Plan with the goal of improving ecological environment and of farmers' livelihood. By mobilizing budget at the state, provincial and county levels, this plan intended to increase the share of livestock farming, protect soil surface through cultivation of perennial plants and promote grass-fed livestock farming. Nevertheless, this region lacked human resources capable of initiating and implementing the above-mentioned plan, as well as grass seeds, livestock, and initial investment cost for livestock-house construction, causing major delays on transition from agriculture to livestock farming.												
Objectives of the Project	<ol style="list-style-type: none"> Overall Goal: To diffuse the model system created in the project, improve the ecological environment, and to improve livelihood of the farmers in the Yanmenguan Region. Project Purpose: To construct a model system^(Note) for improvement of both ecological environment and livelihood of farmers and to establish a system for diffusion in the Yanmenguan Region. (Note) The model system refers to a series of activities including participatory project planning, improvement of ecological environment and of livelihood mainly through transition of livestock farming from grazing to housing. 												
Activities of the project	<ol style="list-style-type: none"> Project site: Yanmenguan Region, Shanxi Province. The model counties and model villages: Youyu County, Shuozhou City (Xialiugou Village, Shuangkouzi Village, Dingjiayao Township) and Loufan County, Taiyuan City (Panjiashuang Village, Yangquanzhuang Village, and Geduo Village) Main activities: surveys, development of land utilization plans, selection of model villages, planning and implementation of pilot projects, technical instruction at county and village levels, development of diffusion plans (plans to diffuse the outcomes of pilot projects) in the model counties and villages, etc. Inputs (to carry out above activities) <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">Japanese Side</td> <td style="width: 50%;">Chinese Side</td> </tr> <tr> <td>1) Experts: 6 persons</td> <td>1. Staff allocated: 52 persons</td> </tr> <tr> <td>2) Trainees received: 25 persons</td> <td>2. Land and facilities: project offices and cost for utilities (province, two model counties)</td> </tr> <tr> <td>3) Equipment: office equipment, training equipment, inputs for pilot projects such as sheep and agricultural machinery, audio visual equipment to diffuse the pilot project outcomes, etc.</td> <td>3. Local cost: 6,560,000 yuan (approx. 79 million yen) for project implementation, pilot project implementation, etc.</td> </tr> </table> 					Japanese Side	Chinese Side	1) Experts: 6 persons	1. Staff allocated: 52 persons	2) Trainees received: 25 persons	2. Land and facilities: project offices and cost for utilities (province, two model counties)	3) Equipment: office equipment, training equipment, inputs for pilot projects such as sheep and agricultural machinery, audio visual equipment to diffuse the pilot project outcomes, etc.	3. Local cost: 6,560,000 yuan (approx. 79 million yen) for project implementation, pilot project implementation, etc.
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Ex-Ante Evaluation	2006	Project Period	March 2007 to March 2011	Project Cost	392 million yen								
Implementing Agency	The Shanxi Science and Technology Department and the governments of Youyu County and Loufan County.												
Cooperation Agency in Japan	Ministry of Agriculture and Fisheries/ The Japan International Research Center for Agricultural Sciences												

II. Result of the Evaluation¹

1 Relevance	<p>This project has been highly consistent with China's development policy "optimization of the industrial structure of agriculture, in particular, increase of proportion of house farming of livestock, acceleration of development of livestock farming, measures against soil erosion in the Loess Plateau area, and promotion of protection of ecological environment through recovery of vegetation" as set in the 11th 5-year Plan for National Economic and Social Development (2006–2010) and "protection of ecological environment and sustainable economic development through promotion of livestock farming" as set in the Yanmenguan Ecological Livestock Economic Zone Construction Plan (2001-2010), and development needs "protection of ecological environment and poverty reduction in Yanmenguan Region by promoting the Construction Plan (mentioned above)", at the time of both ex-ante and project completion. It is also consistent with Japan's ODA policy as set in the Country Assistance Policy for China (2001) at the time of ex-ante evaluation. Therefore, relevance of this project is high.</p>
2 Effectiveness/Impact	<p>This project envisaged i) to develop a model by conducting pilot projects at model villages and by instructing related techniques and ii) to develop documents for diffusing the model to other villages. The project promoted transition to cultivation of perennial plants, improvement of stock farming techniques and transition from grazing to house farming, so that the mitigation of degradation of ecological environment (such as soil erosion) and improvement of livelihood would be attained simultaneously.</p> <p>As a result, pilot projects including pasture development and construction of facilities for livestock farming, etc. as well as technical training by the Chinese counterpart personnel were planned and implemented, and the planted grassland area and</p>

¹ In this ex-post evaluation, evaluation judgment was made based on analysis of information collected from written questionnaires and interviews with concerned organizations by telephone or email. Observation at the project sites was not conducted.

per capita income from livestock farming increased as planned (see the table below). These results were put together and documented in training materials and “the diffusion manual”, and thus became ready for diffusion. Therefore, it can be said that the project purpose “to construct a model system for improvement of both ecological environment and livelihood of farmers and to establish a system for diffusion” was achieved by the time of project completion.

After project completion, the training and technical advice given under the project have continued in the model villages. The pace of diffusion of house livestock farming and pasture cultivation is slow in some model villages due to constraints in securing budget for diffusion; nevertheless, such methods have been utilized to a certain extent in the six model villages as a whole². As for the overall goal (adoption of the model in other villages), the implementing agency has been engaged in diffusion of the model using the above-mentioned diffusion manual. By the time of ex-post evaluation, development plans similar to pilot projects have been implemented in 10 non-model villages. In three of them where data were available, planted grassland area and per capita income from livestock farming have increased.

Therefore, effectiveness/ impact of the project is high.

Achievement of project purpose and overall goal

Aim	Indicators	Results																				
(Project Purpose) To construct a model system for improvement of both ecological environment and livelihood of farmers and to establish a system for diffusion in the Yanmenguan Region	1. Based on the village development plan, indicators of improvement of ecological environments and of residents' livelihood in the model villages are simultaneously achieved. (1-1) Planted grassland areas increase by 50 % compared to the 2006 level.	(Project Completion) Increased by 53%. (Ex-post Evaluation) Data that could be judged consistent with the data of project completion were not available. Planted grassland area in 6 model villages (Unit: Mu=approx. 666.7m ²) <table border="1"> <thead> <tr> <th></th> <th>2006</th> <th>2009</th> </tr> </thead> <tbody> <tr> <td>Total 6 villages</td> <td>2,010</td> <td>3,080</td> </tr> <tr> <td>Increase rate from 2006</td> <td>-</td> <td>53%</td> </tr> </tbody> </table>		2006	2009	Total 6 villages	2,010	3,080	Increase rate from 2006	-	53%											
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	(1-2) Income from livestock farming per capita in model farmer increases by 50 %.	(Project Completion) Increased by 84% compared to the 2006 level.. (Ex-post Evaluation) Increasing after project completion as well. Per capita income from livestock farming (Unit: yuan/farmer) <table border="1"> <thead> <tr> <th></th> <th>2006</th> <th>2009</th> <th>2010</th> <th>2011</th> <th>2012</th> <th>2013</th> </tr> </thead> <tbody> <tr> <td>Average 6 villages</td> <td>985</td> <td>1,808</td> <td>2,490</td> <td>2,553</td> <td>2,853</td> <td>2,981</td> </tr> <tr> <td>Increase rate from 2006</td> <td>-</td> <td>84%</td> <td>153%</td> <td>159%</td> <td>190%</td> <td>203%</td> </tr> </tbody> </table>		2006	2009	2010	2011	2012	2013	Average 6 villages	985	1,808	2,490	2,553	2,853	2,981	Increase rate from 2006	-	84%	153%	159%	190%
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Increase rate from 2006	-	84%	153%	159%	190%	203%																
2. C/Ps acquire skills to diffuse the project outcome throughout the Yanmenguan Region through active implementation of project activities at the provincial, municipal, and county levels. (2-1) At least one teaching material is produced for each project activity area.	(Project Completion) More than one teaching material in each subject, totaling 32 teaching materials were developed. (Ex-post Evaluation) A CD-ROM of the teaching materials was produced.																					
(2-2) At least six training sessions targeting at the model villages and counties are held annually by the Chinese C/Ps.	(Project Completion) Total 47 training sessions were held in 4 years. (Ex-post Evaluation) Technical training is continuing on a certain scale. Number of participants in technical training started by this project (Unit: person) <table border="1"> <thead> <tr> <th></th> <th>2008</th> <th>2009</th> <th>2010</th> <th>2011</th> <th>2012</th> <th>2013</th> </tr> </thead> <tbody> <tr> <td>Total participants from Loufan County and Youyu County</td> <td>89</td> <td>260</td> <td>384</td> <td>162</td> <td>164</td> <td>162</td> </tr> </tbody> </table>		2008	2009	2010	2011	2012	2013	Total participants from Loufan County and Youyu County	89	260	384	162	164	162							
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3. To set up roles of each related agency for diffusion, which is done by the Diffusion Office composed mainly of Ministry of Science and Technology, Shanxi Province.	(Project Completion) “The diffusion manual” (diffusion plan) with description of roles in diffusion of project outcomes was developed. (Ex-post Evaluation) “The diffusion manual” is used by the provincial Science and Technology Department and other concerned parties.																					
(Overall goal) To diffuse the model system created in the project, improve the ecological environment, and to improve livelihood of the farmers in the Yanmenguan Region	1. To implement a case referring to this project in county(s) and/or village(s) of the Yanmenguan Region.	(Ex-post Evaluation) Diffusion is being carried out in the following 10 villages. Non-model villages in the model counties: Dashengtang Village (Loufan County), Jinniuzhuang Village, Qianyingwoshan Village and Baitangzi Village (Youyu County). Villages in other cities or counties: Yaozhuang Village (Nanjiang District, Datong City), Naomuyu Village (Lan County, Lüliang City), Xiasanjiao Village (Lishi District), Baijiashan Village (Fangshan County), Housuo Village (Shanyin County, Shuozhou City), Shuocheng District (Shuozhou City). An average of 15 households per village are participates in the diffused activities in such fields as pasture, house livestock farming, pastoral farming (new breed of livestock), and development of facilities/equipment and technical guidance related to those activities. The diffusion is carried out by the International Cooperation Office, Shanxi Science and Technology Department, The Shanxi Science and Technology International Project Office, Shanxi Academy of Forestry Sciences, Institute of Animal Science of Shanxi Academy of Agricultural Sciences, etc.																				
	2. Income from livestock farming per capita increases by 50 % in three years in villages in Yanmenguan Region after incorporation of this project's model.	(Ex-post Evaluation) Increased by 101% in 3 years in the 3 villages in Youyu County (out of the above-mentioned 10 villages). Per-capita income from livestock in 3 non-model villages (Unit: yuan/person) <table border="1"> <thead> <tr> <th></th> <th>2010</th> <th>2011</th> <th>2012</th> <th>2013</th> <th>Growth rate 2010-13</th> </tr> </thead> <tbody> <tr> <td>Average of Jinniuzhuang, Qianying-woshan and Baitangzi Villages</td> <td>1,430</td> <td>2,470</td> <td>2,686</td> <td>2,870</td> <td>101%</td> </tr> </tbody> </table>		2010	2011	2012	2013	Growth rate 2010-13	Average of Jinniuzhuang, Qianying-woshan and Baitangzi Villages	1,430	2,470	2,686	2,870	101%								
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Average of Jinniuzhuang, Qianying-woshan and Baitangzi Villages	1,430	2,470	2,686	2,870	101%																	
3. The area of planted grassland increases by 10 % in three years in	(Ex-post Evaluation) Increased by 30% in 2 years. If assuming the same growth rate in one more year, the 3-year growth rate is estimated to be 49%.																					

² During the period from project completion and ex-post evaluation, the number of households that practice house livestock farming increased in four out of the six model villages. Also, the farmland and facilities such as livestock houses, silos, water supply facilities, etc. have been maintained and used by the time of ex-post evaluation except part of grass farm, commercial forest and shrub land. For those activities that did not continue at the time of ex-post evaluation, it can be said that they played their roles during the development of the model by verifying its applicability under various conditions.

villages in Yanmenguan Region that incorporated this project's model.	Planted grassland area in 3 non-model villages (Unit: Mu)			
	2011	2012	2013	Growth rate 2011-13
	Average of Jinniuzhuang, Qianyingwoshan and Baitangzi Villages	623	703	813

Sources: JICA internal documents and interviews with the counterpart.

Note: Due to time constraints, data for the overall goal indicators 2 and 3 were available only from the mentioned three villages.

3 Efficiency

While the project period was as planned, the project cost was slightly higher than the plan (ratio against the plan: 103%). Therefore, efficiency of the project is fair.

4 Sustainability

In the policy aspect, this project is still given importance in the current development policy as the government of China holds a policy issue "the construction of ecological civilization" and gives ecological protection the highest policy priority, and the government of Shanxi Province promotes policies corresponding to those issues³. In the institutional aspect, the diffusion activity has been carried out by the Shanxi Science and Technology Department, the implementing agency, in collaboration with related departments. There are future prospects as well: after the model was developed, the institutional setting has been further improved in such a way to involve city-level officials who are closer to the field. In the technical aspect, the core members of ex-counterpart personnel are still working on the diffusion activity. In case of transfer of those members, the work is taken over by their replacement. Also, the teaching materials of the training that the project started were processed into a CD-ROM, and on-site instruction and technical guidance play a role to complement the training. In the financial aspect, enough amount was secured from the provincial-level budget, which promoted the diffusion activity in 2011-2013. As for the city and county level budget, while it is noteworthy that more than 1 million yuan was secured for the concerned activity, further diffusion of the project outcomes would require balanced securement of budget between the provincial level and city/county level⁴.

From these findings, it is considered that the project has no problem in the policy background as well as the institutional, technical and financial aspects of the implementing agency; therefore, sustainability of effects of the project is high.

5 Summary of the Evaluation

For the project purpose of developing a model of improvement of ecological environment and farmers' livelihood as well as the system to diffuse that model, this project produced successful results in pilot projects to increase both planted grassland area and livestock income through pasture cultivation, development of livestock facilities, etc. in the model villages, and such results were compiled to "the diffusion manual". For the overall goal, use of the model was diffused to other villages in the Yanmenguan Region through diffusion activities and training/ technical guidance using the manual, and it contributed to increase in planted grassland area and livestock income. As for sustainability, no problem was observed in the policy background of this project as well as the institutional set-up and technical aspect for diffusion of the model. While there is a room for improvement in balancing financial burden between the province and cities/counties, the necessary budget for the diffusion work has been secured.

In the light of above, this project is evaluated to be highly satisfactory.

III. Recommendations & Lessons Learned

Recommendations for Implementing agency:

It is highly evaluated that the outputs of the project have been properly utilized and brought effect. While a good amount of budget is allocated at the provincial level, the county level budget is relatively in shortage. As the core responsibility in future diffusion work is likely to be shifted to the county level, a combined measure of human resource development and budget allocation for diffusion at the county level would further consolidate the diffusion system.

Lessons learned for JICA

This project addressed protection of ecological environment and livelihood improvement, the two issues administered by different departments, in a setting that the Shanxi Science and Technology Department took the overall responsibility, and the project office set up within the Department organized coordination meetings with departments involved in implementation of pilot projects as well as other occasional meetings on important issues. For diffusion of the model at the time of ex-post evaluation, the Shanxi Science and Technology Department has taken the central responsibility and carried out diffusion activity in collaboration with the agricultural and forestry departments. The project produced the good outcomes partly because the counterpart personnel well recognized the importance of collaboration and coordination at the working level, and incorporated this recognition in project implementation such as mobilizing the coordination unit. Therefore, in a project that needs to address issues under the jurisdiction of more than two organizations, it is effective to introduce, during project implementation, a coordination mechanism among the related organizations with clear description of division of roles each organization should take.

³ In 2012, along with "the construction of ecological civilization", the government of Shanxi Province developed plans to restore vegetation in a vulnerable ecological areas of the Lüliang Mountains and to promote livestock farming in the whole Shanxi Province.

⁴ In 2011-2013, the Shanxi Science and Technology Department secured a total of 5.4 million yuan (around 90 million Japanese yen by the exchange rate of August 2014) for diffusion of the project outcomes. Together with the county-level budget that amounted to more than 1 million yuan (around 17 million Japanese yen), a total of more than 6.4 million yuan (around 100 million Japanese yen) of budget was secured.



Diffusion training (lecture)



Diffusion training (field visit)