

Irrigation intervention for Rice Growing Community

(Assessment of Implemented “Cell Box Culvert with Gate”)

A *Cell Box Culvert with Gate* is constructed with fund support from ECOSORN (Economic and Social Relaunch of the Northwest Province (an EC funded project) in Siem Reap Province.

Cell Box Culvert with Gate is a kind of sluice gate to increase water level and to distribute of water to large area of paddy fields. The kind of gate is useful for Cambodian rice farmers and communities to manage and to fairly distribute of water and to ensure adequate amount for the whole period of rice production.

Background:

The scheme was constructed during the Pol Pot time and lacks the necessary water regulating structures to properly manage the water often resulting in low efficiencies and rice yields as a result of that.

The request has been made by the villager during the workshop held in early January 2006. It is in line with ECOSORN target area, CDP (Commune Development Plan) and poverty reduction strategies.

Objectives:

Contributing to the increased agricultural production of local farmers, the structure will enable farmers to either manage their irrigation water and regulate flows especially during the wet season. The scheme improvement benefits 271 farming households in four villages. Improved water management is resulting in an expected rice yield increasement from 1.5 to 2.0 t/ha.

Beneficiaries:

The gate is directly benefiting rice farmers in four villages in the command area – Bet Meas, Thnal Chek, Kansaeng Leu and Kansaeng Krom Villages with total population of 253 families and total command area 272 ha.

Location:

The construction site is on the existing canal (built during Pol Pot regime) in Kansaeng Leu Village, Chansar Commune, Sotr Nikom District, 60 km Eastern of Siem Reap Angkor, Siem Reap Province.

Activities:

The construction started on 25 April by a small local contractor, who had experienced construction of similar structure and was completed and handed over to beneficiaries on 09 August 2006. Contribution of local people was participation in earth work for the construction.



Present Situation:

Most of farmers in the area do not grow Early Wet Season Rice Varieties due to lack of water in the early wet season for seedling in nursery and for transplanting. 25 – 30 % of farmers grow Medium Late Varieties and 70 – 75 % grow Late Maturity Varieties.

Major Rice varieties grown in the area: Phkar Rom Doul, CAR 4, CAR 9, Rieng Chey, Neang Chmar, Srov Chhong. Phkar Romduol is the most popular varieties - 30% of farmers grow for commercial purpose. The production using this variety will be increased to 40% in the next season.

During off season many farmers migrate for construction work and farm works in other areas. Other problems faced by communities: lack of good rice seeds, need techniques in growing corn, vegetables and sugar cane.

According to the lack of labor and high cost in hiring labor for pulling seedling and transplanting, 70 - 75% of farmers change farming practice from Transplanting to Broadcasting (Bet Meas and Thnal Chek Villages). Farmers in Kansaeng Leu and Kansaeng Krom Villages keep the same practices (transplanting) due to the poor soil fertility.

Cropping Season:

Early Wet Season Rice: Most of them not practice

Medium Late Rice: July – November

Late Maturity Rice: July – December

Vegetables: December – April

Economic achievements:

The followings are the estimated command areas and beneficiaries from the scheme.

Estimated Command Area and beneficiaries (Estimated by Villagers)

Village	Village Statistic		Benefit of the scheme	
	Rain fed Production Area (ha)	No of Household	Irrigated Production Area (ha)	No of Beneficiaries (Household)
Bet Meas	140	132	30	30
Thnal Chek	120	130	20	15
Kansaeng Leu*	111	107	111	107
Kansaeng Krom	111	101	111	101
Thlat	<i>These two villages are also benefiting from the scheme.</i>			
Thmei				

* ECOSORN Target Village

Yield Estimation (Estimated by Villagers):

Village	Previous season yield (T/ha)			Present harvest season yield (T/ha)		
	Min	Max	Average	Min	Max	Average
	(Transplanting)			(70% Broadcasting)		
Bet Meas	1.2	2.5	1.5	1.5	2.0	1.8



Thnal Chek	1.0	2.5	1.5	1.2	2.5	1.5
	(Transplanting)			(Transplanting)		
Kansaeng Leu	0.6	1.6	1.0	1.0	2.5	1.2
Kansaeng Krom	0.7	1.6	1.0	1.0	1.5	1.2
Thlat	<i>These two villages are also benefiting from the scheme.</i>					
Thmei						

Result of Crop cutting (by District Extension Officers):

The following is the result of crop cutting in some villages in the areas:

Villages	Names of Farmers	Names of Varieties	Crop Cutting Date	Average Yield 2006 (T/ha)	Average Yield 2005 (T/ha)	Yield Differences (T/ha)
Bet Meas	So Bun	CAR 9	15/12/06	3.162	2.350	0.812
Thnal Chek	Chao Hey	Srov Chhong	15/12/06	3.175	2.260	0.915
Kansaeng Leu	Sao Neun	Phkar Sla	15/12/06	3.337	2.470	0.876

Source: District Agriculture Office, Soutr Nikom District, Siem Reap Province.

Income generated:

In general, farmers keep their paddies for family consumption. The increase in yield had allows them to sell some surplus to purchase other items. Comparing to previous harvesting, this year's harvest has significantly increased their income:

Villages (1)	Names of Farmers (2)	Names of Varieties (3)	Average Income 2006 (Riels/ha) (4)	Average Income 2005 (Riels/ha) (5)	Income Differences (Riels/ ha) (6)=(4)-(5)
Bet Meas	So Bun	CAR 9	1,843,446.00	1,311,300.00	532,146.00
Thnal Chek	Chao Hey	Srov Chhong	1,851,025.00	1,261,080.00	589,945.00
Kanseng Leu	Sao Neun	Phkar Sla	1,945,471.00	1,378,260.00	567,211.00

Remarks: Paddy Price: 558 Riels/ Kg (December 2005); 583 Riels/ Kg (December 2006) (Source: Mr. Seum Sina, District Extension Officer, Soutr Nikom District, Siem Reap Province).

Social achievements:

As result of this scheme intervention, farmers will form Water User Group to manage and maintain the scheme. Assistance from DOWRAM is required. It is also possible to create own jobs for those who are willing to be engaged in and expanding farming activities, rather than seeking jobs outside their community.

Conclusion:

1. The tendency of yield will be increased due to good supply of supplementary irrigation in the wet season.
2. Farmers with lack of tools and techniques to measure their land size and accurately weighing rice yield may under estimate their rice yield.
3. In the future, innovative farmers might introduce second crop (after rice harvest) in the area closed to the scheme, with technical support from ECOSORN project/ PDA.