

LAO PEOPLE'S DEMOCRATIC REPUBLIC
**MINISTRY OF COMMUNICATIONS, TRANSPORT, POST
AND CONSTRUCTION**



Impact Assessment Report

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ANNEX I

Introduction¹

The UNDP/ESCAP/ILO pilot project was implemented in two selected zones² of Oudomxai Province in the northern part of Lao PDR. The project was to produce three different types of output. In the first place it would carry out interventions to improve accessibility in the two selected zones comprising 19 rural villages. Secondly, it would define a process which, linked to the IRAP planning procedures, would be replicable for other districts or provinces in Lao PDR and other countries in the region. Finally the pilot project would provide an empirical basis for a process based on rural accessibility planning and implementation and would try to establish linkages between rural accessibility and rural development.

The project started in Oudomxai Province in 1996, and at that time a baseline study was conducted in the two selected zones. Most planning and implementation activities took place in 1997 and 1998. Amongst the interventions were the construction of two roads, two small scale irrigation schemes and two village water supplies in Phone Home Zone and the construction of three schools and three village water supplies in Mok Wen Zone. Related non-infrastructure interventions included the preparation of village action plans, sector action plan, selected land-use planning in Mok Wen Zone and different capacity building exercises.

This report is the last one in a series describing the different phases of the project. It attempts to assess the impact the project has had on accessibility and livelihood in Phone Home and Mok Wen areas. The field work for this impact evaluation study has taken place in May and June 1999, six months up to a year after completion of implementation of the different projects prioritized by the local communities.

I Methodology

For this impact evaluation three different tools were used:

- household surveys
- village participatory meetings
- traffic count

household surveys

In 1996, at the start of the project, household surveys were conducted in all villages of Phone Home and Mok Wen Zones. A 10-15% sample was drawn and interviewers were asked to select households of different socio-economic status to represent the village as a whole. Each village consists of one or more village units, and at least one household was interviewed in every unit. Annex 1 lists the villages by zone and shows the actual number of interviews conducted.

In 1999 the household surveys were repeated. The same questionnaire was used and the same persons were interviewed. Mok Wen village, however, has moved out of the area to Luang Namtha Province³ and could therefore not be included in the 1999 survey. One head of household interviewed in 1996 in Mok Wen Zone

¹ For detailed background information see the different reports prepared by IRAP Vientiane or ESCAP Bangkok.

² The selected zones are Phone Home Zone in Xai District and Mok Wen Zone in Pakbeng District.

³ Apparently, this move was not very successful and villagers are now moving back. This information has not yet been verified.

had died, and the enumerators decided to interview a different household with a comparable socio-economic status.

village participatory meetings

In 1996 village participatory meetings were held in the villages involved to find out about villages' problems and priorities. These meetings included PRA techniques⁴ like mapping and priority ranking. In 1999 the team went back to these villages to discuss to what extent the village priorities had been realized. Future plans for the villages were also discussed, mainly focussing on activities the villagers intend to undertake by themselves.

traffic count

Both in 1996 and in 1999, a year after the completion of road construction, a traffic count was carried out. For 14 days all types of vehicles and foot passengers passing the Phone Home road were registered. In both years the traffic count was carried out in the same season, towards the end of the dry season.

II Phone Home Zone

results of household survey

The average household size in Phone Home increased from 5,7 in 1996 to 6,3 in 1999. Over the period reported on, the percentage of households primarily dependent on income from agricultural production has remained 97%. The amount of landless households decreased considerably, from 38% to 19%, while the average amount of hectares owned by the households remained almost the same. Over the period under review, new lowland rice fields have been created and taken into use by the villagers.

In Phone Home the amount of cows and buffaloes owned by the villagers has decreased. According to IRAP/ESCAP staff working in this area, many families have sold livestock and bought rice mills, hand tractors and different means of transport instead. Table 2 confirms these observations.

Table 1: Livestock ownership

	average number of heads (1996)	average number of heads 1999
cattle	1,4	0,9
buffalo	1,9	1,4
pigs	2,0	2,2
poultry	10,9	15

The average household income in 1996 was as low as 179.583 kip. The reported average income in 1999 is 634.531 kip and the increase is mainly due to an increased selling of agricultural produce. To get an idea of the trend in purchasing capacity of the villagers though, these figures will need to be corrected for inflation. For the villagers in Phone Home the increase in the price of rice is probably the most important factor. In 1996 a household could buy 225 kilos of rice for 179.583 kip, while in 1999 634.531 kip would buy 253 kilos of rice. This is a real increase of 12,5%, which can most likely be attributed to the project interventions.

⁴ The community development workers used the AIC (Appreciation, Influence, Control) techniques also being used, amongst others, in Thailand.

Table 2: Other possessions

	percentage of households owning (1996)	percentage of households owning (1999)
boat	0	0
motorcycle	0	0
bicycle	17	23
cart	7	12
rice mill	4	56
fish pond	19	42
sewing machine	17	26
generator	4	2
tv	0	0
radio	48	43

Table 3: Sources of income

	average annual cash income (kip) (1996)	average annual cash income (kip) (1999)
sale agricultural products	49.457	355.930
sale livestock	84.674	213.139
casual labour	1.429	25.511
regular employment	7.655	24.836
loans	17.095	9.302
cash remittances	476	0
business	15.321	5.813
other	3.476	0
total	179.583	634.531

Due to the construction of improved water systems the number of villagers using a stream, shallow dug well or spring as their main source of drinking water decreased. The average water collection time though increased from 6 to 10 minutes.

Table 4: Water supplies

source	percentage of households using in dry season (1996)	percentage of households using in wet season (1996)	percentage of households using in dry season (1999)	percentage of households using in wet season (1999)
shallow dug well/spring	56%	78%	21%	56%
stream	43%	17%	40%	5%
spring fed gravity	0%	0%	30%	30%
improved well	1%	5%	9%	9%

The average number of plots cultivated decreased from 3,9 in 1996 to 2,3 in 1999. Moreover, the size of the first plot decreased from 1,1 to 0,63. A logical explanation is that more families have access to paddy fields,

which would normally be smaller but more productive plots⁵. Obviously this would mean a reduced pressure on uplands for shifting cultivation.

Table 5: Average size main plots

	average size (hectares) (1996)	average size (hectares) (1999)
plot 1	1,1	0,63
plot 2	0,8	0,82
plot 3	0,7	0,67

The following table shows the different crops produced and sold in Phone Home. With the construction of the road through the area, the selling of agricultural produce has become much easier. Traders from Meuang Xai often visit the area and buy produce from the farmers in the villages. Over the last two years the villagers have experimented with different cash crop. Sesame and garlic have been tried out but were not always that successful. By now most farmers concentrate on the cultivation of peanuts, for which they can receive a very good price. It appears that improved road access induces traders to visit the area and buy products at the farm gate.

Table 6: Crops and their use

1996		
crop	hh growing	hh selling
rice	100%	47%
maize	17%	0%
peanut	62%	60%
cassava	40%	11%
chili	40%	11%
sesame	26%	26%
taro	19%	2%
banana	9%	2%
egg plant	19%	0%
cucumber	2%	0%

1999		
crop	hh growing	hh selling
rice	100%	60%
maize	42%	21%
peanut	75%	72%
cassava	5%	0%
chili	33%	30%
sesame	14%	14%
taro	9%	7%
banana	9%	5%
egg plant	16%	12%
vegetables	2%	2%
garlic	5%	2%
oranges	5%	5%

In 1996, 67% of the households were marketing crops. Mostly they had to travel outside their village to sell their products. By now, 86 % of the households is marketing crops, mostly in the village. Only 26% of the households travel outside their village to sell, which confirms the observation of traders travelling into the area.

The amount of households trading other than agricultural products has decreased from 55% to 12%. Different explanations are possible for this trend. One of them is the effort the villagers put in the production of peanuts.

⁵ The improved irrigation schemes could better regulate the water supply during the wet season and, if accompanied with appropriate extension services, allow for a second crop increasing annual yield drastically.

School attendance has increased with an estimated 10%, while the visits to the dispensary have decreased with an estimated 18%. This latter trend is remarkable since the ADB dispensary was completed in 1996. Improved health awareness and practice, demonstrated by an increased medical consultation in the area, might have contributed to this decline.

Table 7: Use of social services

	1996	1999
households with children attending school	64%	70%
households visiting dispensary in year before interview	62%	51%
household making use of medical teams	87%	95%

village participatory meetings

In the 1999 village participatory meetings the villagers discussed the achievements in the development of their village over the last three years, as well as plans for the future⁶. The following table highlights the main achievements since 1996 and the future development projects the villagers plan to undertake by themselves.

Table 8: village participatory meetings

village	already achieved	future plans
Phone Home	<ul style="list-style-type: none"> - road - expansion paddy field area - increased peanut production - increased number of fishponds - village fencing - shop opened 	<ul style="list-style-type: none"> - tree planting - improve village fencing - latrines
Phieng Xay	<ul style="list-style-type: none"> - land rights - water supply (ADB) - school (ADB) 	<ul style="list-style-type: none"> - school repairs - maintenance water supply
Vang Mon	<ul style="list-style-type: none"> - road - increased peanut production 	<ul style="list-style-type: none"> - village fencing - irrigation
Na Chang	<ul style="list-style-type: none"> - road - irrigation - increased cash crop production 	<ul style="list-style-type: none"> - village fencing
Houay Lieng	<ul style="list-style-type: none"> - increased number of fishponds - increased number of rice mills - increased number of carts 	<ul style="list-style-type: none"> - medicine bank
Houay La Vong	<ul style="list-style-type: none"> - expansion paddy field area - increased number of fishponds - increased number of rice mills 	<ul style="list-style-type: none"> - village fencing - stimulate saving
Houay Khai	<ul style="list-style-type: none"> - road - improved water supply - increased number of fishponds - medicine bank 	<ul style="list-style-type: none"> - motivation school attendance - village fencing

⁶ During the 1996 Village Participatory Meetings the villagers developed a vision for future development of their community and identified priority projects to be implemented by the community with or without assistance from the outside world.

Sanang Pi	<ul style="list-style-type: none"> - road - increased number of fishponds - increased number of rice mills 	<ul style="list-style-type: none"> - school repairs - maintenance water supply
Houay Tam	<ul style="list-style-type: none"> - irrigation - increased peanut production - increased number of fish ponds - increased number of rice mills 	<ul style="list-style-type: none"> - school repairs - latrines - village fencing - road maintenance
Houay Hia	<ul style="list-style-type: none"> - expansion paddy field area - irrigation - increased amount of rice mills - medicine bank 	<ul style="list-style-type: none"> - motivation school attendance - village fencing - livestock grazing area
Houay Top	<ul style="list-style-type: none"> - water supply - expansion paddy field area - increased number of fish ponds - increased number of rice mills - shop opened 	<ul style="list-style-type: none"> - village meeting room - village fencing

Traffic count

Table 9 summarises the average daily traffic on Phone Home road. It appears that fewer people walk and that traffic levels have increased drastically. This increased traffic consists mainly of newly purchased motorcycles or bicycles, traders coming in and transport services linking the zone to the provincial capital. The socio-economic benefits of these increased traffic volumes are obvious and include time savings, improved access to health, education and markets and increased opportunities to sell produce.

Table 9: traffic count

type of passenger/vehicle	average number per day passing (1996)	average number per day passing (1999)
foot passenger	138	113
bicycle	2.4	16.4
motorcycle	1.1	10.4
tuktuk/samlo	0	10.0
handtractor	0	2.3
private car	0	0.3
pick-up	0.1	1.3
truck	0	1.3

III Mok Wen Zone

household surveys

The average household size in Phone Home decreased from 7 in 1996 to 6,5 in 1999. Over this period the percentage of households primarily dependent on income from agricultural production increased from 90% to 96%.

In 1999 all households reported to be landless, whereas in 1996 still half of the households had access to paddy fields. Apparently in 1996, many villagers in the area has access to paddy fields at the other side of

the Mekong River. This land however never really belonged to them and has now been returned to farmers in Sayabouly Province.

The amount of cows and buffaloes owned by the households has remained stable, but there is a decrease in the amount of pigs and poultry owned. Table 11 shows a slight increase in the ownership of other assets, notably boats, rice mills and fishponds.

Table 10: Livestock ownership

	average number of heads (1996)	average number of heads 1999
cattle	1,1	1,1
buffalo	1,2	1,3
pigs	4,0	2,7
poultry	15,9	11

Table 11: Other possessions

	percentage of households owning (1996)	percentage of households owning (1999)
boat	0	13
motorcycle	0	0
bicycle	0	0
cart	0	0
rice mill	50	63
fish pond	0	33
sewing machine	20	21
generator	7	4
tv	13	13
radio	43	38

The table on average annual cash income shows some alarming figures. The total yearly revenue per household would have decreased from 246.995 kip to 102.248 kip. Taking into account the rate of inflation during this period, this would mean a serious deterioration in terms of livelihood. Part of this could be explained by the fact that villagers don't have access anymore to the paddy fields in Sayabouly Province. A different explanation would be that respondents do not want to mention the source of revenue. Certainly the people owning boats and/or growing opium will have income from sources not mentioned here. Some important traditional sources of livelihood or income such as slash and burn cultivation, logging and opium production and trade are all discouraged by Government and could have reduced disposable incomes. These however are mere speculations but merit some more thorough research.

Table 11: Sources of income

	average annual cash income (kip) (1996)	average annual cash income (kip) (1999)
sale agr. products	67.367	5.833
sale livestock	9.800	36.666
casual labour	80.612	44.333
regular employment	0	5.000
loans	1.283	0
cash remittances	0	10.416
business	81.933	0
other	6.000	0
total	246.995	102.248

Due to the construction of improved water systems, the number of villagers using a stream or spring as their main source of drinking water has decreased. The average water collection time though increased from 17 to 19 minutes.

Table 12: Water supplies

source	percentage of households using in dry season (1996)	percentage of households using in wet season (1996)	percentage of households using in dry season (1999)	percentage of households using in wet season (1999)
shallow dug well	13%	17%	17%	17%
stream	63%	57%	29%	29%
spring fed gravity	0%	0%	54%	54%
spring	27%	27%	0%	0%

The average number of plots cultivated decreased from 1,9 in 1996 to 1,5 in 1999. Also the size of the plots has decreased. This could partly explain the decrease in agricultural income as shown above.

Table 13: Average size main plots

	average size (hectares) (1996)	average size (hectares) (1999)
plot 1	0,6	0,49
plot 2	0,7	0,51
plot 3	0,8	0,6

The range of crops produced among the respondents has decreased. They stopped producing sesame and cassava. Whether the production of opium has indeed reduced in the area is questionable.

Table 14: Crops and their use

1996		
crop	households growing	households selling
rice	93%	10%
maize	23%	3%
opium	7%	7%
timber	7%	3%
sesame	7%	7%
cassava	7%	0%
taro	7%	0%
vegetables	3%	0%
fruits	3%	0%
pineapple	3%	0%

1999		
crop	households growing	households selling
rice	92%	4%
maize	29%	1%
taro	8%	0%
banana	4%	0%
egg plant	4%	0%
vegetables	8%	4%
fruits	4%	0%

The percentage of households marketing crops has reduced from 40% to 8%. The percentage of households marketing other products has reduced from 14% to 13%.

Table 15 displays some characteristics on the use of social services. School attendance has increased spectacularly. This is by far the most important impact from the pilot project in Mok Wen Zone. The use of dispensaries and visiting medical outreach teams has slightly decreased when comparing 1999 with 1996.

Table 15: Use of social services

	1996	1999
households with children attending school	13%	63%
households visiting dispensary in year before interview	36%	21%
household making use of medical teams	87%	83%

Indeed, a very positive development in the area is the proportion of households that have children attending primary school. It has increased from 13% to 63%. Also the rate of households visiting clinics or dispensaries might be explained positively. Due to the provision of clean water sources in the area, the occurrence of intestinal diseases is likely to have decreased.

village participatory meetings

In village participatory meetings the villagers discussed the achievements in the development of their village over the last three years, as well as plans for the future. The following table summarizes the achievements since the inception of the pilot project and the development projects the villagers plan to undertake by themselves in the future.

Table 16: Village participatory meetings

village	already achieved	future plans
Pha Lome	<ul style="list-style-type: none"> - school - water supply - increased number of rice mills - increased number of fish ponds 	<ul style="list-style-type: none"> - village fencing
Keng Leir		<ul style="list-style-type: none"> - school - motivation school attendance
Teng Sa	<ul style="list-style-type: none"> - water supply - increased number of rice mills 	<ul style="list-style-type: none"> - village fencing
Chom Hout		<ul style="list-style-type: none"> - village meeting hall - water supply
Louang Tong	<ul style="list-style-type: none"> - school - water supply - increased number of fishponds - latrines 	<ul style="list-style-type: none"> - latrines - bridge repairs - improve roads within village
Phou Hung	<ul style="list-style-type: none"> - school - increased number of fishponds - increased vegetable gardening 	<ul style="list-style-type: none"> - maintenance water supply

IV Conclusions

For impact evaluation of a project like this, we have to ask two different questions. One is whether the interventions decided upon have had a positive impact on accessibility. The second question is whether the overall quality of livelihood has improved in the two pilot zones.

With regard to the first question, the answer will be positive for all eleven interventions. In Mok Wen Zone there is an impressive increase in the amount of children attending school. Access to clean drinking water in the area has improved considerably. In Phone Home the results of the different interventions are well visible in the results of this study, notably an increased ratio of school going children, an improved access to clean drinking water and an extensive use of the road for the sale of agricultural produce.

When it comes to the second question, it is likely that the project has contributed substantially to the improvement of living conditions and alleviation of poverty in Phone Home Zone. Living conditions would probably not have changed without the assistance and interventions. Whether overall livelihood has improved in Mok Wen Zone because of this project remains unclear. It is unlikely however that the type of interventions will impact on poverty directly. The data on access to lowland rice fields, agricultural production and income show a reverse trend. Although villagers now have access to clean drinking water and education, their production and their annual income seem to have decreased over this three year period. The causes for this trend are obviously not related to the project, but to external factors like the return of paddy land to Sayabouly Province. The question remains by what means the overall livelihood situation in an isolated area like Mok Wen can be improved.

It is indeed safe to conclude that in Phone Home the project has improved the overall living situation of the villagers. Nearby zones with similar characteristics but without any rural development initiatives did not experience such a drastic change and living conditions remained more or less the same. The number of household assets, the selling of agricultural produce and the average household income all have increased. Moreover, the discussions in the village participatory meetings show that the villages are now better organized and more able to deal with the daily problems themselves. Activities such as fencing the villages

or digging the fishponds are now being undertaken by the villages without any external assistance. This is a very important indirect effect of the pilot project, which involved villagers in planning as well as in implementation of the interventions, thereby stimulating villagers to organise themselves. As a result of the participation local communities have build up their confidence, developed a sense of ownership of the different development activities and improved certain technical skills. These accomplishments will have a long lasting impact but which is difficult to measure.

The construction of the road has had an overall impact on development in the area. Traders now visit the area to buy produce, shops have been opened along the road and medical teams are travelling within the area with more ease. The area has been opened up and villages have increased opportunities to benefit from improved access and different services and facilities. These findings confirm an earlier evaluation of a similar rural road project in the province. This evaluation⁷ concluded, inter alia, that the improvement of road access resulted in an immediate change and start of a development process in the area.

A Word of Caution

The short-term effects of the road project in Phone Home Zone are remarkable. These effects however will not last if the road deteriorates again. In order for the road and the complementary projects to have a sustainable impact it is necessary for the road to stay open for traffic all year round. Eventually the short-term effects will create a long-term impact, which will positively transform living conditions and poverty.

During the last day of the preparation of this short report, the authors were informed that the road is quickly deteriorating⁸. Land slides are not being cleared and heavy trucks have damaged the surface. As a result tuk-tuks can no longer reach Phone Home Zone and only transport by truck remains possible. To sustain the impact the project has had on the living conditions in Phone Home Zone it is imperative that the provincial authorities organize and implement a maintenance scheme. Without proper maintenance the road will quickly deteriorate and Phone Home, once more, will be cut off and the short-term effects will disappear.

⁷ See Johanson (ILO 1997): Socio-Economic Survey on Short Term Impact on Rural Road Construction

⁸ This information has not yet been verified.