

PROGRESS REPORT ON THE  
USAID/LAOS-ROYAL LAO GOVERNMENT PROJECT FOR OPIUM POPPY CROP  
SUBSTITUTION IN HOUA KHONG PROVINCE.

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Ban Houei Sai, Laos

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Progress Report on USAID/Laos-RIG Opium Poppy Crop  
Substitution Project for Houa Khong  
Province-Ban Houai Sai.

I. Backgrounds:

In 1971 the Royal Lao Government enacted legislation prohibiting the commercial production and marketing of opium and its derivatives. This legislation entails elimination of the main cash crop and economic base of many hilltribes of Laos. In order to minimize resultant economic and social trauma among the population of the opium growing regions, the Royal Lao Government requested USAID assistance to develop a program to redirect hilltribes towards more productive cash crops.

The project's goal is to develop alternate agricultural crops or systems which will replace income lost from opium production. An experimentation-extension approach was selected for implementation in Houa Khong Province. This province was selected because of favorable security conditions plus the fact that it is the home of some 25,000 traditionally opium growing tribes people.

The project employs a three-fold approach to the goal of agricultural redirection:

1. Experimentation and testing of new crops and techniques.
2. Extension activities to introduce new crops and techniques to hilltribes.
3. Resettlement of hilltribes on rice paddy land.

## II. Phou Pha Dang Crop Introduction Centers:

The "Crop Introduction Center" is located at Ban Phou Pha Dang, a white Meo village at an elevation of 3,000 ft. The Center provides facilities and land for test plantings of new crops. The Center and its operation is intentionally simple and unsophisticated. This is in keeping with available resources, transportation and manpower. This simplicity, though making work more difficult, may contribute to eventual success of the center.

Work was begun at the location in March, 1973. Four hectares of was cleared by hand in three plots at elevations of 3,000 ft. and 4,000 ft. The RIG Provincial Agriculture Research Chief manages the station. USAID employs four technicians and local labourers.

The work of the center can best be described as verification/propagation-test plantings of crops to verify adaptability and eventual propagation and distribution of suitable planting material to hilltribe villages. Labourers are recruited from different tribes and learn on an "apprentus base". More formal training will be initiated later. For most crops/ideas, work is just beginning. Tentative results to date, however, are summarized below:

### A. Fruit and Nut Tree Project:

Fifty eight varieties of 29 species of fruit trees have been planted at the two elevations. In limited areas and circumstances (near markets or with high value fruits) fresh fruits may be marketed by hilltribes. A more generally applicable marketing approach may be working with dried or preserved fruits and nuts.

Especially for tree crops too short a time-frame has elapsed to give definite results.

<u>Crop</u>	<u>No. varieties Planted</u>	<u>Time to Harvest</u>	<u>Observed Growth Results</u>	<u>Prognosis</u>
Avocado	1	8 yrs.	Good	Very good for home consumption.
Cardamom	2 (wild)	-	Good. Sent for analysis.	Very good for semi-cultivation.
Chinese Chestnut	1	10-12 yrs.	Good	Possibly good.
Coffee	4	3-5 yrs.	Robusta looks very good. Arabica coming good too.	Good.
Cumquat	3	4-5 yrs.	Good	Good. Home consumption and limited market.
Custard apple	2	5-6 yrs.	Fair	Good, But limited market.
Durian	3	8 yrs.	Poor. Doesn't stand cold	Not suitable.
Fig	1	4-5 yrs.	Good	Possibly good. Can preserve.
Grape	2	1-2 yrs.	Fair	Good for limited fresh market. Can dry.
Grape-fruit	1	6-7 yrs.	Good	Good but limited market.



Guava	1	4-5 yrs.	Good	Fair. Limited fresh market.
Jackfruit	2	10-12 yrs.	Fair	Not likely suitable.
Jujuba	1	3-5 yrs.	Fair	Poor potential.
Lemon.	1	3-5 yrs.	Fair	Fair for fresh market.
Lime	3	3 yrs.	Fair	Poor.
Litchee	5	8 yrs.	Good	Good, if for fresh market.
Longan	4	6 yrs.	Very good	Good-Can be preserved.
Mandarin	1	5-6 yrs.	Poor. Too dry.	Needs market access and water.
Mango	4	5-6 yrs.	Poor. Too cool.	Poor.
Mangosteen	1	10 yrs.	Poor. Too cool.	Not suitable.
Pear (Burmese local)	1	10 yrs.	Good	Good.
Peach (Burmese variety)	1	6-8 yrs.	Good	Good. Can be preserved.
Pomelo	3	10 yrs.	Good	Needs market access.
Rambutan	1	6-8 yrs.	Poor. Too cool and dry	Poor.
Roseapple	3	5-8 yrs.	Very poor. Only variety sarek doing fair	Poor.
Saporidilla	1	4-5 yrs.	Good	Fair, if market outlet
Sweet Orange	2	4-5 yrs.	Tra variety very poor	Needs market.
Tangerine	1	5-6 yrs.	Poor	Needs market.
Tea	2 (1 wild)	2-3 yrs.	Excellent	Very good, if market.

The plantings to date are mostly high elevation adaptability test plantings of local fruits. Plantings of semi temperate zone and exotic fruits are to be planted this year.

#### B. Chinese Medicinal Plant Project:

Only two species of Chinese medicinal plants have been test planted this first year. A wild variant of a third has been found. Six other medicinal plants used by the hilltribes have been collected and, after more extensive collections are made, will be sent for analysis.

<u>Crop</u>	<u>No. Varieties</u>	<u>Time to Harvest</u>	<u>Observed Growth Results</u>	<u>Prognosis</u>
Ginseng	3 (1 wild)	3-5 yrs.~ root; 1 yrs. leaves and buds	Excellent vege- taive growth. Root formation still uncertain	Dependant on root quality. (Up to \$20/root). Possible satisfactory market for leaves and buds. Used as an aphro- disiac.
San-si	1 wild type	2-3 yrs.~ root	--	Higher market value than ginseng if good root quality. Meo use to aid healing of broken bones; Chinese as general conditioner.
Red Inul	1	5-12 months	Growth slow Plant small.	leaves used as general conditioner.

C. "Tong-Ku" Mushroom Project:

"Tong-Ku" or Japanese mushrooms are being test planted to determine feasibility of cultivation in Laos. Only one log has been impregnated with spawn-200 logs of three tree species are ready for inoculation, which should be done in March, 1974. Dried mushrooms sell for 700-900 baht per kilo.

D. Field Crop Trials:

Some variety and adaptability trials are being done with field crops. However field crops bear the onus of requiring slash-and-burn cultivation (as does opium). This is especially undesirable in Laos at this time because, due to land pressures caused by refugee movements, slash-and-burn land is at a premium for rice production.

At best slash-and-burn cultivation of field crops destroys timber reserves, rapidly depletes the soil, damages the water shed and discourages permanent village locations. Field crops and vegetables also tend to have low value per unit weight.

<u>Crop</u>	<u>No. of Varieties</u>	<u>Observations</u>
Soybeans	10	Poor yields due partially to late planting. Best variety was TK-5.
Corn	2	Improved varieties not up to native variety.
Peanuts	1	Poor yields.
Bush beans	2	Average yield. Has good potential for home use. Variety "All Season" Gave best yield.
Mung beans	1	Poor yield.
Kidney beans	1	Good.
Potatoes	3	Good initial growth. Root maggot and wilt problem. Binje variety appears best.
Day lily	1	Has not yet flowered. Not likely of commercial value.

E. Forages Project:

Three rai of land has been planted to forages for use as cover crops and range improvement. Plantings are just started and problems of range development using only hand labour will be considerable.

Eleven species of forage have been planted:

- Napier grass-good potential for cut-carry feeding of horses and cattle.
- Molasses grass-has potential for broadcast seeding on old rice fields.
- Centrocema.
- Pennisetum-good growth.

F. Essential Oil Project

Two rai of lemongrass has been planted. Growth is good, but oil extraction as a village industry will be the problem. Other essential oil crops are to be planted this year.



### III. Extension Program:

An extension program was initiated to begin work in hilltribe villages of Houa Khong Province. The eventual value of the extension project lies in bringing experience obtained at the crop introduction Center to the farmer. The Extension program was initiated at the onset of the USAID/RLG Crop Substitution Project to;

- demonstrate to the hilltribes and their leaders the governments' active interest in crop substitution.
- locate local leaders and areas for future co-operation.
- provide immediate assistance to hilltribes in those areas possible.

The initial extension activities have met these aims. The extension program will continue with activities based in four extension "zones" of the province.

Initial extension activities are as follow.

#### 1. Village Vegetable Training Project:

Agriculture agents conducted two-day training programs and provided eight varieties of vegetable seeds to over 700 farmers in forty-one villages.

#### 2. Improved Boar Project:

Six Duroc boars were placed in influential hilltribe villages to cross breed with native stock. Villagers planted soybeans to use as feed supplement and agreed to follow veterinary service advice on the care.

#### 3. Fish Pond Project:

Nine hilltribe refugee villages have participated in a project to encourage fish culture. Villages were given advice, hand tools, and fingerlings. 95 ponds have been constructed.

#### 4. Opium Yield Check:

In order to help gather some basic data on opium production/profit two yield check were conducted in 1972-73. Even the two checks are valuable as there is general paucity of information on opium yield. The yields on 1/4 rai plots were 4.8 kg/ha and 5.2 kg/ha. (Note: These were relatively good fields in a year of poor yields).

#### 5. Training-Xieng Ngeun Redirection Center:

Twenty-seven trainees have been sent to the Xieng Ngeun Redirection Center from Houa Khong Province.

#### 6. Nam Kheung Extension Office:

A zone extension office was constructed in the market town of the major opium growing region of the province. The facility will aid RLG/Agriculture and Veterinary Services to develop programs in the area.



#### IV. Resettlement:

A pilot project for hilltribe resettlement and agricultural redirection was begun in December of 1972. The purpose of this project was to assist four villages of Yao, who had decided to give up opium cultivation, in making the transition to paddy rice cultivation. A lowland area not too far from their villages was found to be suitable for paddy, and plans were made to clear and develop the land, investigate possibilities for irrigation, and relocate the several villages at a site more central to the project area. Eighty-five families have been resettled.

Royal Lao Government (RLG) and United States Agency for International Development (USAID) assistance to Ban Nakong, as it is now called, have been/are as follows:

1. Land Clearing: The USAID has provided bulldozers (2), operators (3), mechanics (2), and fuel to do the clearing, new village sit development, and construction of several kilometers of roads for access to nearby markets and the Mekhong. In all approximately 180 hectares of land will be cleared; this will be completed by the end of January, 1974.

2. Plowing: The RLG Ministry of Social Welfare has provided two farm tractors to help cultivate the land during the first two years of its development as paddy. Fuel for this activity is being supplied by the USAID.

3. Irrigation survey: A topographical survey was completed by a USAID irrigation team late in 1973. Information obtained is being studied to determine the feasibility of irrigating the new land.

4. School construction: A two-room school was completed by USAID at Nakong in September of 1973. Children from not only the new village, but several surrounding villages attend--some 80 in number. Classes are taught by an RLG teacher.

5. Village water supply: A small water system is being installed to supply fresh, clean water to the village from a nearby mountain stream. Twelve taps will be installed in six locations around the village; approximately 1,000 meters of plastic pipe will be used.

6. Medical services: A small dispensary at the site is now run by a USAID medic. It is hoped that in the future a more permanent building can be constructed and operated by the RLG. Medical services in this and other villages will be extremely important if opium addiction is to be successfully combatted.

In addition, opium addicts from Nakong (or any village) are offered free treatment at the National Detoxification Center in Vientiane. It is felt that this treatment, in conjunction with improved medical services at Nakong, will help to eliminate addiction within the next few years.

7. Agricultural support: As the people of Nakong have had little experience in paddy farming, have no tools or equipment for this, and, as a result of giving up opium cultivation, have little cash to use for equipment.

purchases, assistance is being given to them in the way of "agricultural support" during the first two years of their transition. Buffalo, farm implements, miscellaneous tools, fertilizer, and insecticide are being provided, as are seed (paddy rice, several varieties of beans, sesame, garlic, vegetables) and instruction/training in new agricultural methods.

Today the Nakong redirection project includes not only the new resettled village of Nakong, but also a second already-established village, Lan Thang Pao, which lies within the project area. Land cleared will be divided so that the people of both villages have approximately 2 hectares/family for development. The total number of families participating is 85, with an overall population of about 570 persons. There are two other, small villages whose people are interested in joining this project; however, it appears that available land for clearing in this particular area would not be sufficient for a greatly-expanded community.

With a school and small dispensary already in use, and land-clearing, the village water system, and the resettling process nearing completion, villagers of Nakong and Lan Thang Pao are showing positive attitudes about their change in life-style. Although there is some hesitation and uncertainty, many are making permanent-type investments in Nakong; bigger and better houses are being built, fruit trees and gardens are being planted (one man has even bought and planted 100 kilograms of garlic), and dozens of fishponds have been dug. With major outside inputs nearing conclusion EIC and USAID involvement at Nakong will consist mainly of agricultural extension activities to ensure that the villagers have a chance to make a success of paddy farming and to assist them in trying other new crops such as fruit trees and field crops. A close watch will also be kept on the progress made in this pilot project over the next year, in order to determine how successful it actually is, and to be able to better plan any future resettlement/redirection projects.