

FOCUS ON THE SOUTHERN THAILAND

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INTRODUCTION

IN May 1983, the Project THA/80/006 co-sponsored with the Department of Agriculture a seminar-workshop on the "Rainfed Farming in Sounthern Thailand". Then, we were hoping that more research activities will be implemented in rainfed areas of the South. However, up to this time, it seems, we have not been successful in attaining that objective.

This paper is a brief report on our part of the research on rainfed areas particularly in the Provinces of Nakhon Sri Thammarat and Phattalung.

It also includes some of the problems we have met and some recommendations.

THE SITUATIONER

Agro-Econological Zone

In the FAO soils classification, southern Thailand is identified as either R_1S_1 , R_1S_7 . In simple terms these are described as zones with high rainfall with soils of recent deposits, highly leached and with very high accumulation of organic matter respectively.

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NOTE : The opinions expressed are that of the authors and not necessarily of their respective agencies.

Southern Thailand signifies the extreme of cases where because of high rainfall the higher areas have been leached of its clay and nutrient contents and deposited in the lowlands near the sea.

Production Stability of Crops

Concerning the production of annual crops, southern Thailand represents stable, medium stable and less stable production areas. In our broad programme of research activities, we are supposed to do farming systems research at the stable production areas in the South, less stable, at Mahasarakham and unstable at Lampang.

We selected the Provinces of Nakhon Sri Thammarat and Phattalung as our project sites.

Socio-Economics

In the Fifth, Five Year Plan of the Government the southern region particularly the boarder provinces, is described as poor, a large number of farmers have no land. The economic base is narrow and not diversified.

The development policy is directed towards readjusting the production structure to widen the economic base to be more integrated with the regional and national economic structure.

The problems of poverty which affect the landless farmers and in particular small fishermen and small rubber plantation owners, must be resolved.

Farming Practices

Initial survey team was sent to Nakhon Sri Thammarat and Phattalung to determine the indigenous farming practices in these areas.

There were two major groups of farmers identified: the rubber planters in the upland areas and the rice farmers in the lowland. Some were planting both crops. The survey showed that the average landholdings in the project site was 21.8 rai and usually scattered into an average of 2.8 parcels. Most land parcels were planted to rice but some (Ave. 6.5 rai) were devoted to rubber.

About 70 per cent have 1-3 heads of cattle but only 20 per cent with pigs. Almost all of them raised native chicken.

Among the major problems identified by the farmers were: weeds in the lowland, rat infestation, insects, diseases, flood and surprisingly, partial drought as well.

There were few who mentioned lack of capital for farming activities and transport as their farming drawbacks.

From our observation, harvesting of rice is still the traditional hand picking with small knife and post-harvest processing of grains is below standard.

THE PROJECT

General objective

From the problems observed and those identified by farmers there is an apparent need to help them improved their usual cropping husbandry including the use of good quality rice with short duration. Then to do cropping systems trials of two rice crops in the same area in one year and perhaps add another crop of legume, corn or sorghum. In between young rubber plantations intercropping of legumes, corn and upland rice will also be done.

The rainfall patterns at Nakhon Sri Thammarat and Phattalung, shown in Figs. 1 and 2 respectively indicate that the proposed cropping systems could be possible.

It is also our aim to integrate livestock with the crops whenever possible.

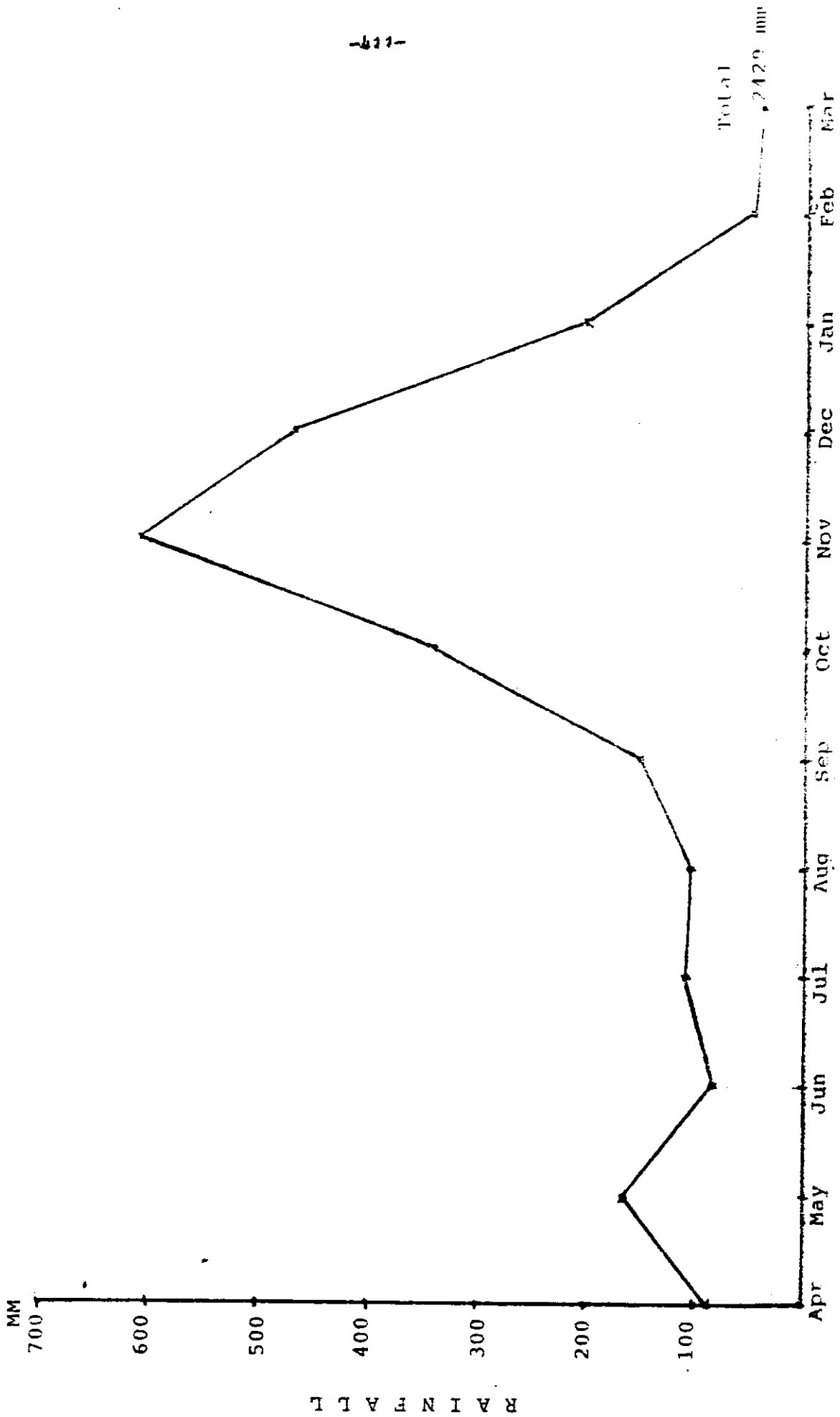


Fig. 1 Average monthly rainfall at Nakhon Sri Thammarat from 1951 to 1980.

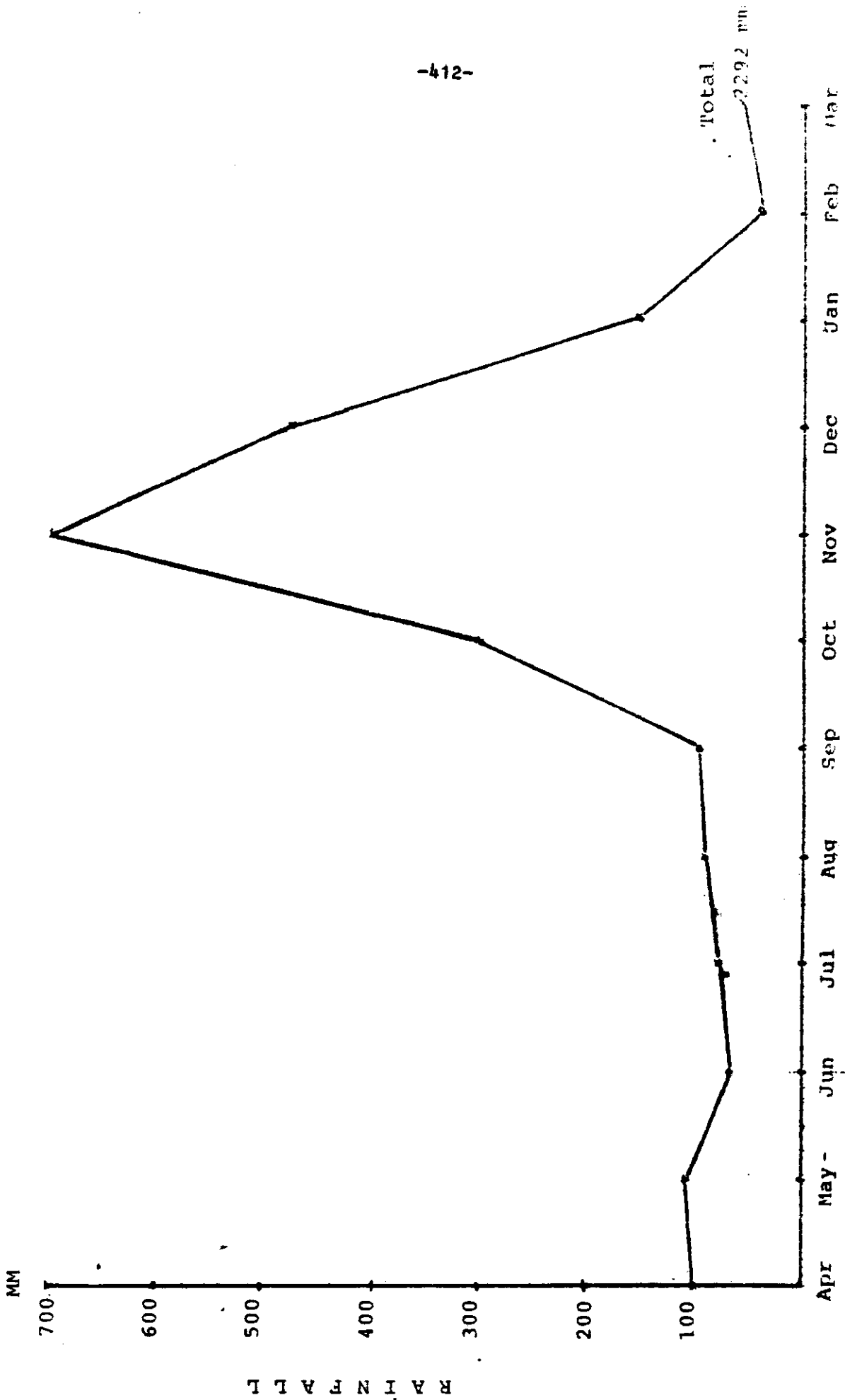


Fig. 2 Average monthly rainfall at Phattalung from 1951 to 1980.

Farming Systems Research Team (South)

Team Leader -- Mr. Hatsachai Boonjung

Agronomist, Southern Region coordinator

Field Researchers: - Mr. Prasert Sarakul

- Mr. Songsak Uthachai

- Ms. Boonsri Julpul

- Ms. Thipsukol Thongleumnak

Socio-Economic Survey: - Ms. Siriluck Sirisup

- Ms. Pawinee Chotikunta

Livestock Integration: - Mr. J. Meinderts

Members on Call: - Ag. Engineer Group

- Crop Environment Group

- Livestock Nutrition Group

- Ms. Samnieng, Soil Science

- Mr. Prachong, Pest Control

Adviser/Consultant: - Mr. Vichan Votong, Head Rainfed
Branch, FSRI

- Mr. Piroje Suwanjinda, Budget, Input
FSRI

- Mr. Ed. B. Pantastico CTA, THA/80/006

- Mr. P.D. Chudleigh, Agric. Systems

The Trials

There were trials conducted on intercropping upland rice, sweet corn, peanut and mungbean with young rubber trees (1-3 yrs old) as single crops. Double cropping between young rubber trees were also done as follows:

- Peanut - Upland rice
- Sweet corn - sweet corn/peanut
- Peanut - sweet corn.

In the lowland sandy soils, three cropping patterns were conducted with two replications:

- Mungbean-Lowland rice
- Mungbean/corn - lowland rice

Seeder was used in direct seeding of rice and other grains provided by the Ag. Engineering Div. and pest control was the responsibility of Mr. Prachong. Soil samples were taken for analyses.

For livestock integration, the idea is to integrate the project on cropping systems with the on-going cooperative dairy program of the Department of Livestock Development in the area.

INITIAL RESULTS

Intercropping With Immature Rubber Trees

According to information, there will be around 300,000 rai of old rubber plantations scheduled to be replanted with high yielding clones at Nakhon Sri Thammarat and Phattalung project sites. This will be the target area for our intercropping.

The initial trials were participated in by 12 farmers both at Nakhon Sri Thammarat and at Phattalung.

Results of the single crop intercropping is shown in Table 1.

Following deductions could be derived from the table:

1. Intercropping any of these crops is a strong possibility with young rubber trees in the area.
2. Sweet corn gave the highest gross margin while that of rice, the lowest.

We do know, however, that sweet corn has a limited market and in the long run rice may be planted by the farmers essentially for their own consumption.

3. The local price of these crops were good compared with our corresponding sites in the North.
4. The technology can be continued and expanded after several trials.

Another trial was conducted at Nakhon Sri Thammarat by intercropping double crops between rubber trees. Results are in Table 2.

Note that the pattern sweet-corn-sweetcorn gave a relatively good margin. However, we are not recommending this system except in especial cases when the market demands for continuous supply of sweet corn, like company orders or contract for processing. In which case, high inputs of fertilizers and chemicals can be afforded.

As a general practice, however, this system is not ecologically sound. Without continuous replenishments of nutrients, the soil will be poorer and poorer. Besides, pest may build-up in the future and the farmers may lose the crop totally.

Compare the performance sweetcorn-peanut and the peanut-sweetcorn cropping systems. It will be observed that there was a big difference in yield and gross margin between the two system. The practice of growing legumes before the planting of corn is technically sound and therefore, recommended. Legume (peanut) can contribute nitrogen to the soil prior to the planting of corn.

The result of double cropping in the sandy lowland areas was not satisfactory. This is shown in Table 3. It is obvious that the first crops suffered from drought. The time of planting the first crops may have to be adjusted and other patterns considered especially in this sandy soils.

Table 1 Yield and gross margin for the single crop intercropping (1984).

CROP (Variety)	YIELD Unit/Rai	PRICE ฿/Unit	REVENUE ฿/Rai	COST ฿/Rai	GROSS MARGIN ฿/Rai
Upland Rice (Local Var.)	303 Kg	3.48	1,054	908	146
Corn (Super sweet)	5,110 ears	0.60	3,066	1,021	2,045
Peanut (Thainan 9)	263 Kg	10	2,530	1,731	799
Mungbean (U-thong 1)	173 Kg	12	2,073	742	1,331

Table 2 Yield and gross margin for the double crop intercropping with young rubber trees at Nakhon Sri Thammarat (1984).

CROPPING SYSTEM	FIRST CROP	SECOND CROP
<u>Peanut-Upland Rice :</u>		
. Yield (Kg/Rai)	195	406
. Revenue (10 & 3.48 ฿/Kg)	1,950	1,413
. Cost (Labor & Materials)	1,731	908
. Gross Margin (฿/Rai)	719	505
Total Gross Margin	724	
<u>Sweet Corn-Sweet corn :</u>		
. Yield (Ears/Rai)	5,316*	3,641
. Revenue (0.60 ฿/Ear)	3,190	2,185
. Cost (Labor & Materials)	1,021	1,021
. Gross Margin (฿/Rai)	2,169	1,164
Total Gross Margin	3,333	
<u>Sweet corn-Peanut :</u>		
. Yield (Ears/Kg/Rai)	5,316*	210
. Revenue (0.6 ฿/Ear, 10 ฿/Kg)	3,190	2,100
. Cost (Labor & Materials)	1,021	1,731
. Gross Margin (฿/Rai)	2,169	369
Total Gross Margin	2,538	
<u>Peanut-Sweet Corn :</u>		
. Yield (Kg/Ears/Rai)	245	7,234
. Revenue (10 B//Rai; 0.60 B//Ear)	2,450	4,340
. Cost (Labor & Materials)	1,731	1,021
. Gross Margin (B//Rai)	719	3,319
	4,038	

* Same area

The on-farm trials will be continued until we attain the objective of producing two crops of rice in the lowland areas.

Table 3 Results of the sandy, lowland areas of Nakhon Sri Thammarat (1984).

CROPPING SYSTEM	FIRST CROP	SECOND CROP
<u>Mungbean - Lowland Rice :</u>		
. Yield (Kg/Rai)	52	488
. Revenue (12 B//Kg ; 3.48 B/Kg)	624	1,698
. Cost (Labor and Materials)	742	908
. Gross Margin (B/Rai)	- 118	790
Total Gross Margin		672
<u>Mungbean/Corn-Lowland Rice :</u>		
. Yield (Kg/Rai)	35	466
. Revenue (12 B/Kg ; 3.48 B/Kg)	420	1,622
. Cost (Labor & Materials)	742	908
. Gross Margin (B/Rai)	- 322	714
Total Gross Margin		392
<u>Lowland Rice-Lowland Rice :</u>		
. Yield (Kg/Rai)	-	488
. Revenue (3.48 B/Kg)	-	1,698
. Cost (Labor & Materials)	-	908
. Gross Margin (B/Rai)	-	790