AID 1020-25 (10-70)

This report reflects the project status at the time of the precipitous fall of the GVN in April 1975

REPORT U-446

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TERMINAL PROJECT APPRAISAL REPORT (PAR)

file 7300314-(9)

1. PROJECT NO.	2. PAR FOR PERIOD	3. COUNTRY	4. PAR SERIAL NO.
730-11-130-314	5/74 TO 4/75	Vietnam	730-75-TP-8

5. PROJECT TITLE

CROP PRODUCTION (CROP PRODUCTION)

PD-AAF-584-D1

6. PROJECT DURATION: Began FY 67 Ends FY 80	7. DATE LATEST PROP	8. DATE LATEST PIP	9. DATE PRIOR PAR
	3/75		November 1974

10. U.S. FUNDING	a. Cumulative Obligation Thru Prior FY: $31,358,000	b. Current FY Estimated Budget: $1,055,000	c. Estimated Budget to completion After Current FY: $ N.A.

11. KEY ACTION AGENTS (Contractor, Participating Agency or Voluntary Agency)

a. NAME	b. CONTRACT, PASA OR VOL. AG. NO.
USDA PASA	VN 06-67

I. NEW ACTIONS PROPOSED AND REQUESTED AS A RESULT OF THIS EVALUATION

A. ACTION (X) USAID	AID/W	HOST	~~B. LIST OF ACTIONS~~	C. PROPOSED ACTION COMPLETION DATE
			1. Poor organization within the Directorate General of Agriculture resulted in splintering of the extension and adaptive research functions and in below potential progress. Greater insistance on the part of USAID toward more efficient, more logical organization would have been highly rewarding in terms of increased rice production.	
			2. Development of the adaptive research function should not necessarily await the upgrading of formal research institutions if to do so causes undue delay in answering often simple but significant farm production problems and if in-hand manpower and agencies can be developed to do the job. The failure to do on-farm fertilizer research in Vietnam early in the program resulted in lower than potential production, the purchase by farmers of unneeded fertilizer elements and the import by USAID of fertilizer materials out-of-balance to that actually required for maximum rice production.	
			3. Near maximum benefits in terms of easy one-for-one (hectares) HYV substitution for native rice varieties were being sought through environment manipulation (low-lift pump irrigation). Also plans for a research facility at which HYVs for Vietnam's one million hectares of deep-water rice land (perhaps the country's major potential paddy resource) would be developed were close to fruition.	Clearance: EA/TD:GDRohlfs [signature] EA/DP:WSLefes [signature]

D. REPLANNING REQUIRES REVISED OR NEW: ☐ PROP ☐ PIP ☐ PRO AG ☐ PIO/T ☐ PIO/C ☐ PIO/P

E. DATE OF ~~MISSION~~ REVIEW 9/3/75

PROJECT MANAGER: TYPED NAME, SIGNED INITIALS AND DATE	~~MISSION~~ DIRECTOR: TYPED NAME, SIGNED INITIALS AND DATE
Keith Byergo [signature] for,	A-D EA/VN:AHWirtz [signature] 9/5/75

4. Political and military considerations aside, PL 480 rice imports into South Vietnam after June 30, 1972, were detrimental to the effort to increase paddy production since, due to artificial price controls, the natural paddy flow from the Delta to Central Vietnam was not allowed to develop when significant Delta surpluses began to occur. As an example, rice prices in the highland were maintained at prices equal to Saigon and Delta prices, and reflect true transportation and handling costs. These artificial price manipulations were disincentive to Delta rice production.

NOTE: It is believed that this project was highly productive because of the combination of a highly receptive farm population, high-yielding rice varieties, new production technologies and the widespread availability of fertilizers and pesticides (through the Commodity Import Program) and production credit (through new institutions developed under the Agriculture Credit Project.) Farmer receptivity was enhanced by the highly successful Land-to-the-Tiller Project. Rice production even exceeded the previous highest production years (in the 1930s) when Vietnam was an important rice exporter- and this was done on only 60% of the paddy land used in the 1930s as the statistics back then included both North and South Vietnam.

The following papers are attached to this PAR:

Narrative Summary of Project History
Seed Production Program
Sorghum Production Program

Additional "lessons learned" are included in the latter two papers.

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II. PERFORMANCE OF KEY INPUTS AND ACTION AGENTS

A. INPUT OR ACTION AGENT — CONTRACTOR, PARTICIPATING AGENCY OR VOLUNTARY AGENCY	B. PERFORMANCE AGAINST PLAN: UNSATISFACTORY 1	2	SATISFACTORY 3	4	5	OUTSTANDING 6	7	C. IMPORTANCE FOR ACHIEVING PROJECT PURPOSE (X): LOW 1	2	MEDIUM 3	4	HIGH 5
1. USDA/PASA						X						X
2.												
3.												

Comment on key factors determining rating

The USDA PASA supplied thirty-five technically trained people who inte rated research findings from IRRI and other agronomic research centers, into educational programs for the transfer of improved technology to Vietnamese farmers. The above transfer made possible the introduction of high yielding rice varieties on over 800,000 hectares of rice land.

	1	2	3	4	5	6	7	1	2	3	4	5
4. PARTICIPANT TRAINING				X						X		

Comment on key factors determining rating

DOA Staff Register was studied & arrangements completed with Vietnamese American Association for about 80 planned & potential participants to study English at night. Negotiations were essentially completed between the GVN and the Government of Thailand to send 2 rice-service technicians to Bangkok for 4-6 months, deep-water rice production training (AID-funded) at the project termination. (continued)

	1	2	3	4	5	6	7	1	2	3	4	5
5. COMMODITIES				X						X		

Comment on key factors determining rating

Commodity use was minimal and, for production program, limited to seed and extension service. As the project closed, final disposition of the few rice-associated commodities which were the subjectoof audit end, use reports was receiving very close scrutiny by the agriculture and auditor's offices. (CIP funded large amount of imports for commercial production)

		1	2	3	4	5	6	7	1	2	3	4	5
6. COOPERATING COUNTRY	a. PERSONNEL				X								X
	b. OTHER												

Comment on key factors determining rating

(a) As a result of recent Minister of Agriculture changes, Ministry policies which had prevented full use of participant training opportunities were reversed allowing progress reported in Item 4.

(b) MOA maintained a Priority No. 1 level for the rice program and was intent upon achieving a surplus position and beginning to export as soon as possible.

(c) DGA supervisory capability over province programs was strengthened by appointment of eight permanent administrative teams whose function was both inspection and program development.

(d) Low-lift pump irrigation development in floating rice area was recognized as the most productive and exploitable source of paddy production increase. (continued)

	1	2	3	4	5	6	7	1	2	3	4	5
7. OTHER DONORS					X						X	

(See Next Page for Comments on Other Donors)

Page 2 (continued)

4. PARTICIPANT TRAINING (continued)

Two participants were in US universities studying for MS; five participants were being identified for 6-months RPT at IRRI, beginning June 1.

5. COOPERATING COUNTRY (continued)

(d) continued - Excellent extension programs were forming around five 100 ha demonstration areas. Increased participation of both USAID and GVN technical personnel to accelerate program was recognized and planned for by both agencies.

(e) Efforts to increase productivity of upland rice areas continued by distribution of Halan and Juma I kits among upland farmers.

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P. 7. Continued: Comment on key factors affecting activity of Other Donors

Minimal contributions were in progress on rubber, cotton and seed multiplication and storage under UNDP/FAO.

(a) FAO support of rice service administered National Seed Laboratory including commodities and advisory assistance.

(b) FAO/UNDP Project to assist GVN in developing pesticides analysis capability within the DGA Plant Protection Service.

(c) IRRI (see Crop Production-Research)

III. KEY OUTPUT INDICATORS AND TARGETS

A. QUANTITATIVE INDICATORS FOR MAJOR OUTPUTS		TARGETS (Percentage Rate Annual)					
		CURRENT PROJECT	CUMULATIVE 75 TO DATE	CUMULATIVE 75 TO END	FY 76	FY 77	END OF PROJECT
Seed of New Distribution of HYV, pest & disease resistant, for rainfed controlled water & upland areas	PLANNED	-	2		3		
	ACTUAL PERFORMANCE	11 (67-75)	2				
	REPLANNED						
New extension/training program at low-lift pump demonstration sites	PLANNED	-	5	5			
	ACTUAL PERFORMANCE	-	2				
	REPLANNED						
Paddy Production (millions of MT-to end of FY 75)	PLANNED			7.5			
	ACTUAL PERFORMANCE	28.0		7.2 (est.)			
	REPLANNED						
	PLANNED						
	ACTUAL PERFORMANCE						
	REPLANNED						

B. QUALITATIVE INDICATORS FOR MAJOR OUTPUTS	COMMENT
GVN planning for rice export by late-1975 or early 1976	The GVN was approached by Iranian representatives seek to buy large quantities of aromatic rice. Transaction could not be finalized because of PL-480 considerations. Capabilities of Vietnam to fulfill export commitments dependent upon policies allowing private sector to act.
DGA Admin/Inspection team supervising & assisting Province Rice Programs	Considering DGA organization, this was an extremely important practical step serving to unify province programming and was considered a first move leading ultimately to realignment of DGA agencies.
Water-depth, variety & agr. practices survey conducted by rice services.	Information gained in survey was to be supplied to research & extension agencies to assist these agencies in progra planning.

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IV. PROJECT PURPOSE

A. 1. Statement of purpose as currently envisaged. **2. Same as in PROP?** ☐ YES ☐ NO

To develop the capacity of farmers in Vietnam to produce sufficient food for local consumption and provide substantial exports. Increase the average production of rice from 2.1MT per hectare to 3.0 MT per hectare. Introduce improved sorghum, soybeans and tropical fruits suitable for Vietnamese Agriculture.

B. 1. Conditions which will exist when above purpose is achieved.	2. Evidence to date of progress toward these conditions.
Increase rice production from 4.366 MT in 1968 to self-sufficiency by 1975.	The 1974 rice crop totaled over 6.6 million MT and early crop estimates indicated 1975 crop prospects at 7.1 million MT.
Sorghum would be planted on fallow land and acreages would increase to feed grain self-sufficiency.	Staring at near zero in 1970 sorghum production on floating rice land of the Western Delta increased to 13,000 hectares in 1974, and farmers indicated increased interest in expanding hectarare for 1975.
A viable sorghum seed production program would be established to furnish needed sorghum feed to Vietnamese farmers	The seed crop of 100,000 tons was purchased and processed by GVN. In 1974, GVN announced seed production and processing was to be turned over to private sector. . About 150 tons was purchased from farmers for processing.

V. PROGRAMMING GOAL

A. Statement of Programming Goal

Increased agricultural production efficiency to attain food self-sufficiency , expand exports of foodstuffs and to improve the income of farmers.

B. Will the achievement of the project purpose make a significant contribution to the programming goal, given the magnitude of the national problem? Cite evidence.

The success of the crop production program would positively affect all elements of the programing goal through significant increases in total food production, rice,livestock and fruits, and vegetables.

NARRATIVE SUMMARY OF PROJECT HISTORY

The development of the Accelerated Rice Production program in Vietnam began in December 1967, when in a chartered Air America C-46, the Minister of Agriculture Mr. Thon That Trinh and some of his key staff members, with a number of USAID/Agriculture staff, flew to the Philippines to observe the work at the International Rice Research Institute (IRRI) where IR-8 had been developed.

During this visit, two vital decisions were made: (1) that IR-8 rice seed would be introduced into Vietnam, and (2) that a National Rice Production Training Center (NRPTC) would be established to train trainers in the techniques required to push IR-8 and its sister varieties to maximum production. In early 1968 the absolute priority of rice was established within both the Ministry of Agriculture of the GVN and USAID. Shortly following the 1968 Tet offensive, on April 8, the first of the more than 2,000 Vietnamese technicians who were to receive from two weeks to four months of rice production training at the NRPTC began their studies. The initial NRPTC staff was Hawaii trained. Subsequently these were replaced by six-month IRRI graduates.

An initial seed import of 50 MT of IR-8 arrived in Vietnam in November 1967 and was planted at Vo Dat in Binh Tuy Province. In spite of very late planting, the IR-8 was very successful at Vo Dat leading to the decision to import an additional 2,000 MT of IR-8 and IR-5; this seed planted about 40,000 ha. during the 1968 wet season.

In the beginning, targets were established to increase production of IRRI rices to 500,000 ha. by June 30, 1971. Concurrently with the establishment of the training center and introduction of the high yielding varieties (HYV), through the Agricultural Development Bank (ADB), production credit became freely available to HYV growers and under USAID urging, the GVN adopted policies which allowed the farm-gate price of paddy to rise. Fertilizers and pesticides, which had previously been under GVN control, were shifted to the private sector. With the development of a reasonably efficient distribution system, these materials became much more readily available -- at prices which were highly subsidized -- and the use of inputs, especially fertilizer, expanded rapidly. The GVN estimated that the 1970/71 target of 500,000 ha. -- about 30% of Vietnam's total rice hectarage -- was reached. Total paddy production had increased from 4.37 in 1967/68 to 6.23 million tons in 1970/71 with about half of this attributable to the HYV. This hectarage/tonnage relationship of the HYVs to total rice production maintained through the 1974/75 crop year (ending June 30, 1975) when 3.5 million of an estimated 7.2 million ton paddy crop was attributed to the HYVs.

Under ordinary circumstances, rice imported into Vietnam could have been stopped at the end of 1971. However, political and military considerations dictated otherwise. In addition, the drought of 1972 held 1972/73 production an estimated 300,000 - 500,000 MT short of that which was reasonably expected. There is little doubt, however, that at this time South Vietnam has an exportable surplus.

There is no doubt that the AID approach to increasing rice production in Vietnam was the correct one. In retrospect, areas can be identified where more forceful USAID action might have been taken and which require thought and consideration beyond the scope of this short summary. Among these was the failure early in the program to influence the GVN to develop the institutional organization needed to assure that continuous, effective extension and adaptive research functions took place. Even though the NRPTC record in training was excellent during the first four years, it withered with the reduction of U.S. financial support and training of farmers was almost nil in 1973 and 1974. A resurgence was beginning in 1975 in areas of the Mekong Delta where floating rice farmers were being introduced to the HYV and to low-lift pump irrigation, but this was tracable to U.S. participation of a near-operational nature. Likewise, while good research on items such as variety development and nitrogen requirement and others, through the IRRI contract, were receiving careful attention on two experiment stations, except for wide demonstration of new varieties, on-farm adaptive research such as should or should not phosphorus be used was receiving little attention. This was tracable to the failure of the MOA to seriously inventory their manpower, and financial resources and their problems and to establish and stick to a system of priorities which would use their best people to do the most important things first.

At projects end, under the good influence of the IRRI research team and strong leadership on the part of both the GVN and USAID, the research function was developing strongly. However, the extension function was still highly fractured among the Directorate of Extension and the Rice and Plant Protection Services in the Directorate of Agriculture. However, the Ministry was aware of the inefficiency with which extension was functioning and recent personnel changes (new Vice Minister for Agriculture Doan Minh Quan) gave promise of its correction.

In summary, AID's role was a vital influence in helping Vietnam back to a position of sufficiency in rice production. In addition, even though in the public eye the U.S. association with Vietnam ended in relative ignominy, the rice varieties and the production techniques and the ideas placed there through U.S. efforts are there to stay and will without doubt form the base for any further advances made in rice agriculture in the future.

SEED PRODUCTION PROGRAM - VIETNAM

I. Early Seed Supply

When the sorghum program was initiated, little thought was given to in-country production of sorghum seed. In January 1972, some 200 short tons of NK-300 hybrid seed was imported from the US and distributed free to farmers in the Delta. Adoptive research tests had shown that the open-pollinated variety, Early Hegari, was well adapted to Delta conditions, but little seed of that variety was available in the U.S.

In early 1973, a total of 650 short tons of hybrid seed plus 50 short tons of Hegari seed was imported from the US and again distributed free to farmers. The hybrid varieties consisted of NK-300, NK-222, and NK-265. All varieties did well.

In late 1974, 5 short tons of Registered Early Hegari was imported to be used as pure seed stock for the developing private seed industry.

II. In-Country Seed Production

The problem of maintaining viability of sorghum seed in tropical countries is a result of high temperatures and high humidity. Attempts were made about 1971 to process and maintain sorghum seed by a vegetable seed company. The techniques involved were not clearly understood, and as a result, the seed company lost their investment and never again ventured into sorghum seed business.

In 1973, the GVN purchased and had custom-processed approximately 60 metric tons of Hegari seed. This attempt was not too successful, but some experience was gained. Although the seed had low germination, it was used as planting stock in September in Ninh Thuan Province in Region 2. It was believed that this province was better adapted to seed production than any other in Vietnam due to having the lowest humidity and with some irrigation available. The farmers in this area were poor, and the seed program was a valuable addition to their economy, not only as a cash crop, but eventually as a human food.

The 1973 seed crop in Region 2 amounted to some 100 tons and was purchased and processed by the GVN. Personnel assigned to this project had no knowledge of seed and little interest. As a result, the project lagged and was poorly executed. The only salvation was that the seed was urgently needed in Region 4 and there was no lapseof time

from processing to planting - consequently little loss of germination.

In 1974 at the urging of USAID, the GVN announced that production and distribution of sorghum seed would be turned over to any private persons who were interested. The GVN furnished the planting stock in Region 1 and the private sector brought, processed, and distributed the seed crop for the first retail sale of sorghum seed. The entire process operated swiftly and efficiently, with the price of seed increasing some 75% during the sales period. This initial success of the first retail sales was very encouraging for the private seed industry. There were some opportunities involved, as was expected, but it also encouraged those who had a genuine interest. The crop for this year totalled some 120 metric tons of Hegari seed.

The fall planting in 1974 for seed harvest in early 1975 was entirely the responsibility of the private sector. Only one company had saved seed stock which they issued to growers under a contract for seed production. Farmers not wanting to contract were sold seed at slightly higher prices. In the meantime, joint efforts of USAID and the GVN had taught farmers how to maintain their own seed from harvest to the next planting season--this program was quite successful.

The early 1975 seed harvest was plagued by inflation, an increasingly questionable market for seed, and a deteriorating security situation. Approximately 150 tons were purchased from farmers, although much more was produced, but only some 40 tons were sold at the retail level. About 60-70 tons of seed were delivered to reluctant feed millers--no payment was ever received for this delivery. Some 40 metric tons of well-processed seed, packed in branded vapor-resistant polyethylene bags were still stored in a Saigon warehouse when the owner fled Vietnam. He is now a refugee in the U.S. His financial loss for that seed crop was the equivalent of some $30,000.

III. GVN Influence on Seed Production

Never was there sufficient appreciation of the need of a solid seed program by the official of the GVN who were in a position to make decisions and see that they were carried through.

The GVN didn't have sufficient trained personnel in seed technology and those who had some training were usually assigned to other positions.

Lack of firm government policy toward seed hindered development of a private seed industry. The GVN frequently proposed new activities that discouraged private investment, e.g., after assuring private seedsmen of non-interference in sorghum seed production, a new Director of Agriculture again announced plans for government-production of sorghum seed under contract with farmers.

IV. Private Seed Industry

Initially a number of persons and companies showed interest in seed business, but as was mentioned earlier, many of them were opportunists and they disappeared when conditions were not favorable. At the close of the program, there were two major and a few minor private interests involved. The one major company had established its own research station, was increasing a new yellow endosperm sorghum; was evaluating different hybrid sorghum varieties imported from the US; was evaluating hybrid sweet corn varieties; was increasing an open-pollinatedvariety of sweet corn, Hawaiian sugar; and was increasing a dryland variety of water convolvulus.

This same major company had exported the first private sector shipment of rice seed to Cambodia. This operation was professional in every way--machine-sewed, new bags, tagged, sealed and stencilled.

There was no modern seed processing machinery in the private sector. Some machinery had been furnished the GVN by USAID, but was in quite poor condition due to lack of maintenance and interest. Two new seed cleaners had been recently furnished the Institute of Agricultural Research, but were never used. Modified coffee-grading machinery was successfully used in the processing of sorghum seed by some in the private sector.

Very few heated-air seed dryers were ever used, but the time was near when they would have been installed. Sun drying was the common method used, but even that was becoming refined--e.g., placing thermometers and humidity recorders in the drying sorghum seed to guard against extreme high temperatures that would damage viability.

A network of retail seed distributors was developing although first experiences were frustrating. GVN personnel often used their position in attempts to gain personal profit. Lack of knowledge on the part of retailers was apparent, but would have been overcome when those not genuinely interested would have dropped out. Seed distribution was a side-line with all retailers, and they hesitated to invest capital.

V. Conclusions to the Vietnam Seed Program

In any agricultural program, the first consideration must be in identification of adapted plant varieties. Next in importance is a program or system of furnishing the planting material--in this case, seeds. This point is too often overlooked by AID, and usually overlooked by the host-government of a LDC. Without complete government interest and support, a seed program will never contribute as it should, nor will the agriculture program be the success that it could have been. This was the case in Vietnam. A good seed program takes time to build from a small beginning.

Sometimes a government seed program is the best approach as that is the only source of funds available to risk in a new industry, and only government can afford the expense of training personnel.

In Vietnam, there never was sufficient GVN interest to assure a successful seed program; consequently, the major USAID efforts were directed to the private sector. These efforts were becoming successful, and indications were that a solid private seed industry was well on the way to being a reality.

LMBurgett/USAID/VN:6/27/75

SORGHUM PRODUCTION PROGRAM

This project was instigated in 1973 primarily as a livestock feed grain program, even though some consumption for human food occurred particularly in Region 2.

The livestock industry expanded rapidly during the presence of U.S. and other foreign military staff. Initially imported grains provided feed for this industry. With the shortage of feed grains in 1972 and the curtailment of the PL 480 grain shipments, ways of expanding indigenous grain production were investigated. Sorghum was found to be viable under unique conditions in the deep water area of the Mekong Delta in Chou Duc and An Gaing Provinces. Seed could be planted on still wet soil following rice harvest and produce grain with no further moisture and minimal fertilizer. Though low yielding, 1.5 to 2 metric tons per hectare, cost of production was also very low. Supplemental irrigation and fertilizer, primarily nitrogen, increased yield three to four times.

In theory this appeared to be a good way to increase feed grain production. The first problem to overcome was seed. With extreme conditions of heat and humidity and no refrigeration, holding seed from season to season was difficult. Monsoon production in the Delta was very limited. Region 2. offered an alternative. This Region has traditionally produced small hectarges of corn and sorghum. Farmers were encouraged to increase production and provide seed to Delta farmers. This program, initiated in 1973, produced more than enough seed for projected plantings in 1975.

The other major problem was one of markets and price incentives for farmers. Farmers of the Delta in the 1974-75 planting season resisted planting sorghum because of the expected low price. From a 13,000 hectare crop in 1974, the plantings were reduced to less than 3,000 hectares in 1975. All inputs of seed and fertilizer were readily available. Seed, as an example, was in better supply and of better quality than ever before. Yet, due to the past years' experience with a lower price than expected and the prospects for low prices in 1975, acreages were drastically reduced. Under MinAg auspices producers and users met together to determine a price that would be mutually satisfactory. Prospects for a large 1976 crop in the Delta were indicated as a result of these meetings.

In contrast, the Region 2. farmers with prospects of a high 1974-75 planting season price increased production from 200 tons to nearly 800 tons in one season.

Improved sorghum grain seed and production technology was readily accepted by Vietnamese farmers; however, the price structure had to be such as to provide adequate incentive for farmers to make use of the new technology.

Lessons Learned

1. An indigenous private sector seed supply must be available before large scale production of a given crop can be expected.

2. As with the case of other crops, it was shown that even though a crop and its production technology is accepted if the producer cannot expect a reasonable return for labor and capital invested in the crop production, he will not grow the crop or use the technology.