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Programme
Alimentaire
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Programa
Mundial
de Alimentos

Executive Board
Third Regular Session

Rome, 20 - 23 October 1997

EVALUATION REPORTS

Agenda item 5



Distribution: GENERAL
WFP/EB.3/97/5/Add.1
27 August 1997
ORIGINAL: ENGLISH

MID-TERM EVALUATION OF PROJECT VIET NAM 4617

Rehabilitation and upgrading of sea dikes

Total food cost	10 598 726 dollars
Total cost to WFP	13 932 107 dollars
Date approved by the CFA	29 May 1992
Date plan of operations signed	12 February 1993
Date of first distribution	10 March 1993
Duration of project	Five years
Official termination date	9 March 1998
Date of evaluation	November 1996
Composition of mission	WFP/FAO ¹

All monetary values are expressed in United States dollars, unless otherwise stated.

¹ The mission consisted of a senior evaluation officer (team leader), WFP; an agro-economist, WFP; a sociologist, WFP; and an engineer, FAO.

ABSTRACT

Families living in the project areas are disadvantaged and food-insecure partly as a result of damages caused by typhoons and salt water intrusions. The protection works have given project beneficiaries a sense of security and confidence in the future. The beneficiaries have intensified agricultural production and are starting to set up income-generating activities. At the same time, irrigation, electrification and other infrastructural activities are being developed in many project sites. Socio-economic indicators already reflect a rapid improvement of living conditions, particularly with regard to an increase in per capita food availability. The project as a whole has progressed satisfactorily, in spite of delays in WFP food deliveries. However, the conditions under which WFP wheat and wheat flour were exchanged for local rice did not generate enough rice to enable the project to fully compensate workers for activities actually completed, let alone to achieve the targets foreseen in the project summary and plan of operations.

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BACKGROUND

The problem

1. Viet Nam has 2,500 kilometres of dikes which protect about 500,000 hectares of land. However, the dikes are too low and suffer from design deficiencies. During typhoons, salt water flooding occurs through overtopping or breaching of dikes. This causes human suffering and widespread destruction of crops in fields and in storage, as well as infrastructural damage. Soils are salinized and may take several years to recover their productivity. Typhoons create an environment of risk which discourages agricultural investment and development. Since high-yielding varieties of rice are extremely susceptible to salinity, farmers tend to rely on more resistant but lower-yielding traditional varieties. As typhoons normally occur during the summer/autumn period, many farmers simply prefer to grow a single crop of rice during the less risky winter/spring season. Except for Hue, all provinces have existing headworks for irrigation, but canal systems cannot be extended until the risks are reduced to an acceptable level.

WFP assistance for dike rehabilitation

2. The evaluated project, Viet Nam 4617, covers seven provinces in central Viet Nam. These have about 1,100 kilometres of sea and estuary dikes, of which 454 kilometres were proposed for rehabilitation. The project area is characterized by a chronic food deficit, high population pressure, extreme poverty and a high degree of food insecurity of the target group, which is estimated to comprise over 1,747,000 persons (1990 figure).
3. A similar project, Viet Nam 5325 - "Upgrading and rehabilitation of sea dikes in northern Viet Nam" was started in early 1996. It covers five provinces. Its planned duration is four years. The target population is estimated to number 314,512.

Project objectives

4. The stated **long-term objective** was to create favourable conditions for increased agricultural production in the project area. Better dikes are a key measure for improving the protection of land in coastal areas from flooding and the intrusion of salt water, thereby allowing farmers to intensify agriculture through double cropping and the adoption of higher-yielding varieties of rice.
5. The project design spelled out the following **immediate objectives**:
 - a) to rehabilitate and upgrade about 454 kilometres of sea dikes, so that they have better resistance to storms and typhoons and require less routine maintenance work;
 - b) to reduce the incidence of sea water reaching protected areas, as a result of overflow and breaching of the dikes during severe storms and typhoons;
 - c) to increase the area available for cultivation through double cropping and land reclamation; and
 - d) to reduce losses due to typhoons in terms of human lives, crops and infrastructure.

Project outputs

6. The project's outputs were specified as follows:



- a) earth fillings, filters (gravel), rock facing, turfing, concrete construction and facing;
- b) establishment and maintenance of 1,010 hectares of mangroves and dune plantations; and
- c) training of 1,400 brigade leaders and 190 dike engineers, technicians and foresters.

Functions of food aid

7. WFP food assistance in the form of a family ration of 2.5 kilograms of rice per workday was meant to serve as an incentive and enable participating farmers to undertake dike rehabilitation activities. For brigade leaders, food was to be given as compensation for participation in training and work. The income-transfer value of the WFP ration was planned to be substantial. Food aid was also to provide a small element of budgetary support for essential inputs.

Food inputs and commodity justification

8. The implementation of project activities was estimated to require 21,100,000 workdays and 52,750 tons of rice. It was therefore proposed that wheat be supplied, milled into wheat flour and then exchanged for local rice. The rate of exchange of wheat for rice was to be based on WFP's guidelines for commodity exchanges. An exchange rate of 1.4 tons of soft wheat to one ton of local good quality rice had been assumed. On this basis, the project requires 74,550 tons of soft wheat, including 700 tons for monetization to fund essential non-food inputs.

GEOGRAPHIC COVERAGE OF THE EVALUATION

9. The evaluation exercise covered three provinces out of the seven supported through project 4617. These are: Thanh Hoa, Ha Tinh and Quang Nam Da Nang. The mission also received a detailed briefing from the remaining provinces. Preparatory analyses were undertaken by the Agro-economist and the Sociologist, who focused their work on three communes, one in each of the provinces visited. These were selected on the basis of the baseline data survey sponsored by WFP in 1993. The mission also visited three provinces out of five in the area covered by project 5325, mainly to ascertain whether experiences gained in project 4617 had been applied within project 5325. These three provinces were Ninh Binh, Nam Ha and Thai Binh.

ASSESSMENT

The project as formulated

10. The project is well conceived as it addresses the immediate needs of poor people in a permanent state of insecurity with regard to their daily food, their income, property and even their life. The project has created a feeling of confidence within the beneficiaries. Food aid has been an effective incentive in mobilizing unskilled workers.
11. Although project documents are not always sufficiently specific on beneficiaries and targeting procedures, it became evident to the mission that the project is designed adequately. It takes into full consideration financial as well as site constraints and labour availability, thus minimizing the cost of equipment and making maximum use of local



resources (material and labour). All the activities in project 4617 utilize large-scale, labour-intensive construction techniques. These techniques are not only in line with the poverty alleviation aim of the project, but also allow an increase in the quality and accuracy of the sea dikes' vital components, such as the transition filters, and toe and slope protections. This is significant for the long-term safety and durability of the structures.

12. Unfortunately, the modalities for exchanging WFP-provided wheat and wheat flour against local rice did not match expectations.

Food aid management

13. WFP's commitment to the project is 74,550 tons of wheat or its equivalent in wheat flour. As of 30 June 1996, WFP had delivered 10,200 tons of wheat and 21,630 of wheat flour. Late deliveries of the 1996 allocations and belated information on reduced resource levels were perceived as not being conducive to encouraging sound project management practices.
14. By 30 June 1996, the project had achieved 13,839,747 workdays which required 34,599 tons of rice. Project authorities distributed 29,356 tons of rice, utilizing 26,792 tons of rice generated from the exchange process and 2,563 tons borrowed from provincial food companies. Outstanding debts totalled 7,807 tons. This borrowing was made necessary by exchange losses and the late arrival of WFP wheat products.
15. The project summary and the plan of operations indicate that WFP-donated wheat products, shipped to the port of Ho Chi Minh City, would be exchanged for local rice at the provincial level, with the Central Government ensuring that the actual quantities of rice supplied to the project reflected the general principle of "no gain-no loss" to either party. However, the terms of the exchange process were not clearly spelled out, leading to differential interpretations of rice quality to be distributed.
16. Using WFP's guidelines for commodity exchanges (in this case, the c.i.f. price of wheat products and the Ho Chi Minh City FOB price of local 35 percent broken rice), the above-mentioned wheat products should have yielded approximately 35,600 tons of rice. The project was unable to monetize the wheat and wheat flour at prices approaching the value placed on these products by the donor countries, and the purchase price of rice was higher than the indicative export prices because 20 percent broken rice was purchased c.i.f.-delivered at district warehouses. In other words, the rice purchased was of a quality superior to that which is normally supplied by WFP and, since the project is operating in rice-deficit provinces, the purchase price includes internal transport up to the district. It would appear that, in several instances, the cash equivalent of the rice ration is being provided to the project's beneficiaries/workers, in order to: a) reduce project overhead expenses; and b) deal more effectively with insufficient quantities of rice at the district and work site level.
17. Post-c.i.f. losses to 30 June 1996 amounted to 221 tons of wheat flour, or one percent of the amount shipped, and 89 tons of rice, or less than one percent of the amount purchased. There were no reported wheat losses.
18. Although steps have been taken to improve the overall food management and distribution system, there is still a need for developing operating and management systems which are clear, consistent and transparent to all project participants. For example, WFP was invited for the first time to attend a sale of WFP-donated wheat flour as a non-participating observer only in July 1995. The project has a commodity tracking system that follows WFP donations up to the delivery port, but does not extend through the exchange process to the



ultimate distribution of rice to project beneficiaries. Appropriate changes need to be introduced.

Technical implementation

Rehabilitation and upgrading of dikes

19. The concepts elaborated during the 1993 training course on the design, construction and rehabilitation of dikes were well assimilated by the engineers and technicians, who participate from all the provinces. The utilization of the new design procedures and construction methods is satisfactory in the majority of cases. This was confirmed by quality control assessments. The concepts introduced during the training course are actually applied also to the construction and upgrading of sea dike systems outside project 4617. The rehabilitated dikes are generally of good quality. This conclusion is sustained also by the performance of the dikes during the 10 severe typhoons that struck the central provinces during 1995 and 1996. In actual fact, most of the damage which occurred on sea dikes in the southern provinces of the project had been caused by exceptional floods.
20. As at 30 June 1996, 67 percent of the duration of project 4617 had elapsed and 65 percent of the overall targets had been achieved. However, a delay was noted with regard to concrete constructions and mangrove establishment, which are needed to reduce tidal wave energy. The Government has provided essential project inputs in adequate quality and quantity.

Non-food inputs and quality control

21. The quantity and quality of the non-food inputs provided by donors are adequate. These inputs have proved to be very useful for the implementation of the project. It was therefore not necessary for WFP to have the 700 tons of wheat monetized for funding non-food inputs.
22. UNDP project N° VIE/92/023, "Sea dike engineering services", provided expert training and equipment in order to establish in the provinces a quality control of the dike construction, as recommended by the WFP mission of 1993. The provincial personnel are currently capable of using the laboratory and *in situ* test equipment, but quality control tests are not conducted on a routine basis, which is essential for an accurate implementation of the project.

Maintenance

23. Permanent technical staff of the Provincial Dike Management and Flood Control Department organize the control and maintenance of the dike systems, in coordination with the commune teams and district flood control and dike management committees. The funds allocated and the organization mobilized appear adequate, but the mission has noted that less attention is given to day-to-day maintenance.

Environmental aspects

24. The rehabilitation of sea and estuarine dikes will minimize the sea water flooding and salt intrusion resulting from tides and typhoons. The sea dike systems, combined with the plantation of mangrove, will contribute strongly to stabilizing the coastline through the regeneration of the coastal ecosystem of the central provinces, which has suffered from war and other human interventions. The regeneration of the ecosystem in particular provides an



expansion of shelter feeding and spawning ground for fish, crustaceans and mollusks. The stabilization and maintenance of productive lands close to the coast will reduce erosion.

25. The WFP-assisted forestry project 4304, "Reforestation in coastal Viet Nam", is instrumental in the fixation of coastal dunes through the plantation of casuarina; in many ways it is complementary to project 4617. The recent creation of the Ministry of Agriculture and Rural Development, which integrates the former Ministries of Agriculture, Forestry and Water Resources, should further increase cooperation between the projects.

Project beneficiaries

26. The mission estimates that over two million people directly benefit and are to benefit from projects 4617 and 5325. The main economic activities in project areas are agricultural production (for 70 to 90 percent of the households), fishing and salt production. The production of rice is mainly for family consumption, but it is usually insufficient because of the small amount of cultivated land available per family and the damage caused by typhoons and salt water intrusions. Subsidiary crops such as peanuts, sweet potatoes and vegetables are also produced, mainly as cash crops. Salt-producing and fishing families sell or exchange their products for rice. However, many people depend on off-farm job opportunities, usually seasonally and outside the project areas. The project's unskilled workers come predominantly from the project areas.
27. The rice rations provided by WFP (2.5 kilograms per workday) were highly appreciated, especially at the beginning of the project at a time when inflation was high and rice was not always available for purchasing. At the time of the evaluation, there was still no major problem in mobilizing unskilled workers.

Changes indicating benefits derived from the project

Agricultural intensification and related developments

28. The prevention of salt water intrusion has obviously motivated more investment in agricultural land from the national, local and farmers' point of view. Irrigation projects were implemented when possible. A number of activities were introduced, such as new sowing technology to replace transplanting, and new high-yielding and short-term rice varieties. Farmers already invest more on fertilizer and are starting to use agricultural machinery for their production. Irrigation, double-cropping, new varieties, more efficient use of fertilizer and reclaimed land are the main factors contributing to a growth in rice production over the past two years. Previously the second crop (summer/autumn) either failed or was very low-yielding. Double cropping has reduced the food shortage of many households. Salt producers also invest more in their salt ponds. Some better-off families have started to buy ploughing machines and equipment for grain processing. They hire out their machinery to other farmers. In addition, crab and shrimp farming has rapidly developed during the last few years.
29. Intensified agriculture has brought about a reduction in seasonal out-migration. In Ha Tinh province, the number of people seeking temporary jobs through migration has decreased from 2,250 in 1992 to 960 in 1995. Improvements in roads and transportation, together with an increase in agricultural production, have encouraged market development, and people now have easier access to a variety of daily services. The development of markets in turn creates more job opportunities for residents in project areas. In some communes, the dike itself has become an important intercommunal road.



Nutrition

30. Although there has been an increase in the raising of pigs, chickens and ducks in rural Viet Nam, there is still considerable poverty and a consequent high proportion of malnourished children (45 to 50 percent, according to the representatives of the Women's Union), and anaemic women (60 percent) in project areas.

Housing

31. Since the beginning of the project, many families have reconstructed their houses to make them semi-permanent (brick walls, tile roof). Some families can afford to build permanent houses, with concrete ceilings. While in the southern areas people rebuild their houses by collecting step-by-step building materials (bricks, tiles), in northern areas they finance their houses also by borrowing money from relatives, friends or by taking part in a *tontine* (a sort of cooperative through which many people unite to invest in business, rebuild houses or purchase agricultural equipment). Electricity has been connected to many communes since 1994, following the implementation of the project. An increasing number of households are buying equipment such as TV sets, electric fans and radio-cassette recorders.

Safe water and sanitation

32. Compared to the 1992-93 period, there has been some improvement in the water-supply since new public wells were built and some old ones repaired. A number of people can afford to dig shallow wells and install hand pumps. However, in some project areas, residents living near dikes still use rain water or carry drinking-water from a far distance, and use water from wells or the river for clothes washing and animal consumption. The level of sanitation facilities is quite low, with regard to personal hygiene and waste disposal. According to representatives of the Women's Union in the districts visited, 50 to 60 percent of married women suffer from gynaecological complaints, and the proportion of women and children afflicted by parasitic worms is also high (about 50 percent in Binh Giang commune).

Food security and income

33. As a result of increases in rice production, poor households interviewed stated that starting last year, their harvest provides sufficient rice for their family (net of costs such as seed, agriculture tax and irrigation fee). Some families even have a surplus of paddy for sale. Compared to 1992, the proportion of households with a food shortage is considerably lower.
34. Since many farmers are now food-secure from their main agricultural activities, cash income obtained from gardening, subsidiary crops, animal husbandry and working on dikes is used for more investment in production activities and family expenses (school fees, health care, electricity), or devoted to savings.
35. It should be mentioned that poor families are commonly those who lack labourers, are affected by serious illness or have many small children, and those that are involved in only one main agricultural activity and cannot find proper wage-paying employment.

Credit

36. Credit systems have developed in rural areas quite rapidly during the last two years. Thanks to the dikes, the risks in production have been reduced and the banks (mainly the Agricultural Bank) have become more willing to extend credits to farmers for productive



investments. The Bank also gives priority to poor families at low interest rates. The Government has developed a special programme to support poor families through the Bank for the Poor and the Fund for Eradication of Hunger and Poverty, which provides loans to develop household economies. Another form of borrowing money is to take part in a *tontine* (see paragraph 31).

Education

37. There are primary and secondary schools in every commune in project areas. No discrepancies were observed between the attendance rates of girls and boys in school age. Dropping out of school is common in poor families where parents cannot afford school fees and expenses (e.g., books, clothes, contribution to school improvement), and need the children to help the household economy. However, the proportion of children dropping out at the primary level has recently gone down since with better income, more parents can afford to pay for children's schooling. Distance from the schools is another important factor, as noted in Cam Phuc commune, where about 30 percent of small children do not attend school when they reach school age. The school is about 3 kilometres away from the commune, a distance the parents considered excessive.

The situation of women

38. While they benefited from the overall economic improvements achieved in project areas, it seems that only 30 to 50 percent of the project labour force, and only 7 percent of trainees, are women. In the newly-started project 5325 for dike rehabilitation, women are trained to become brigade leaders and are taught managerial skills, with the assistance of the WFP country office.
39. The introduction of new sowing technology to replace transplanting and of agricultural machinery for husking and plucking off paddy has reduced the hard work women had to perform previously. However, no improvement has occurred in women's working conditions in the salt ponds or fishing activities. An improvement for women is that the project has created job opportunities, particularly in animal production.
40. In the communes visited there are several activities to help poor women. The Women's Union plays an important role in encouraging and mobilizing women, especially poor ones, to take part in programmes for women's development, such as family planning and health care for mothers and children. Yet, there has been no significant improvement in terms of sanitary and health conditions, as mentioned earlier.

Updated economic analysis

41. The economic analysis undertaken by the evaluation mission was based on the same approach as in the appraisal report. The following results were obtained in the three sites analysed:

Economic internal rate of return (EIRR)		
(%)		
Province	Evaluation mission (October 1996)	Appraisal mission (October 1991)
Thanh Hoa	27	17.5
Ha Tinh	37	38.5



42. The mission confirmed that the economic internal rate of return (EIRR) is quite high, particularly in Ha Tinh Province, because of the high productivity combined with low labour costs. The value of the increase in production was higher than estimated in the appraisal report, mainly because production increases occurred earlier than expected. Farmers increased their production as soon as a stretch of dike was upgraded; they did not wait until the entire dike was completed. Another contributing factor was that the price of rice rose faster than the costs of inputs such as labour and purchased agricultural inputs.
43. For Quang Nam Da Nang, however, the 1996 EIRR was lower than in the appraisal report, mainly because the estimate of past damage to houses was higher than foreseen at the time of appraisal. Also, the reduction in damage achieved through the upgrading of dikes was lower than estimated in the appraisal report, mainly because these estimates referred to an area wider than the actual project area.

RECOMMENDATIONS

44. The mission recommended the following:
- a) WFP should continue to participate as an observer in the wheat products sales committee in all future auctions, with the authority to insist on a pre-determined bidding floor. Invitations for bids should be more widely circulated and the size of the sale lots adjusted to attract a larger number of prospective bidders. The possibility of introducing a system of bidding by sealed bids should be investigated.
 - b) In future, the purchase price of local rice should more closely approximate the prevailing FOB Ho Chi Minh City price of 35 percent broken long-grain white rice. All delivered rice should be of good quality and from the latest crop.
 - c) If the exchange process of WFP wheat flour for local rice does not result in "no gain-no loss", starting in 1997 WFP should consider buying 35 percent broken long-grain white rice delivered to the project FOB Ho Chi Minh City. Considering the resource constraints facing WFP, the amount purchased would most likely be considerably less than the country allocation, and the project's actual resources in rice would be substantially lower than foreseen in the plan of operations.
 - d) The project, in close collaboration with the WFP Country Office, should institute a tenable and consistent "paper/audit trail" of food movements from arrival through the exchange process to the ultimate beneficiaries. There is a need for a similar tracking system for organizing project works.
 - e) It is necessary to optimize the schedule of construction of the rock revetment and toe protection, section by section, in order to activate immediately the protection capacity of these components.
 - f) Similarly, it is necessary to put maximum effort into the mangrove programme, improving: i) the protection of the plantations; ii) the selection of the site plantation in harmony, when possible, with the fisheries activity, involving the pond owners in the maintenance of mangroves and sensitizing them; and iii) the knowledge of local technicians through additional training.



- g) It is necessary to respect the scheduled construction of the sluices, in order to provide an adequate drainage system and, in case of large floods, minimize the danger of the dikes overtopping and consequently being damaged.
- h) It is indispensable to implement a quality control system on a regular basis, as recommended by previous WFP missions (1993 and 1994), particularly considering that only 34 percent of the concrete constructions have been achieved.
- i) Because the small and localized damages may lead to collapse during the typhoon seasons, raising substantially the cost of repairs, it is necessary to optimize ordinary maintenance actions. Training should be organized for technicians and local people.
- j) The efforts made under the newly-started project 5325 for dike rehabilitation in northern Viet Nam, with the support of the WFP country office, to develop women's skills, particularly in management and work brigade leadership, should be pursued and extended to other skills. Furthermore, the attempts made to provide equal work opportunities to women in project works should continue, and more women should be part of the provincial management boards.

LESSONS APPLICABLE TO OTHER PROJECTS

- 45. Plans of operation for this type of project should more adequately address commodity exchange modalities. WFP's policy of "no gain-no loss" for such exchanges should be clearly operationally defined, on either a country or project basis, before any commodities are shipped.
- 46. The experience in this project highlights the importance of having in place a verifiable commodity and work activity tracking system. It should be possible to track commodities from the loading port through the shipping and distribution process to the ultimate beneficiaries, as well as determine with a reasonable degree of certainty the amount of work that has been accomplished up to a predetermined standard.
- 47. In all engineering projects, ordinary - i.e., day-to-day - maintenance should be implemented in a systematic way in order to reduce subsequent repair costs. A similar approach should be adopted for quality control tests.

