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DEVELOPMENT PROJECT— SRI LANKA 4521.01

Community-managed Rehabilitation of Minor Irrigation Schemes in Sri Lanka

Number of beneficiaries	**132,000 (26,400 labourers and their families)**
Duration of project	Three years (January 2000 to December 2002)

Cost (United States dollars)[1]	
Total cost to WFP	6,833,231
Total food cost	4,303,500
Total cost to Government	3,700,000
Total project cost	10,533,231

[1]One United States dollar equalled 70.55 Sri Lankan rupees in July 1999.

ABSTRACT

Sri Lanka is a low-income, food-deficit country of 18 million people, with an average yearly per capita income of US$670. The World Bank estimates that 35 percent of the population lives below the poverty line. In 1998 the UNDP Human Development Index was 0.716; under-5 mortality rate stood at 22 per 1,000 for boys and 20 per 1,000 for girls. Despite moderate progress in gender development, few women possess the level of economic and political decision-making power enjoyed by men. Nearly 45 percent of the country's cereal requirements are met through imports. The average daily dietary energy supply amounts to 2,260 Kcal and the FAO Aggregate Household Food Security Index (AHFSI) was 84.7 for the period 1993–95. In 1998, Overseas Development Assistance to Sri Lanka was US$823 million; the total food aid received amounted to 31,592 tons, of which 37 percent came from WFP.

About 80 percent of the poor live in rural areas; poverty to a large extent coincides geographically with the rain-dependent dry zone, which has been subject to prolonged and recurrent drought. Minor irrigation water reservoirs (tanks) store seasonal rainfall for agricultural production, animal husbandry, and domestic purposes. In the past decades communities have failed to maintain their irrigation systems, leading to increased food insecurity.

In accordance with decision 1999/EB.A/2 of the Executive Board, WFP focuses its development activities on five objectives. This project addresses objectives 3, 4 and 5 (make it possible for poor families to gain and preserve assets; mitigate the effects of natural disasters, in areas vulnerable to recurring crises of this kind; and enable households which depend on degraded natural resources for their food security to make a shift to more sustainable livelihoods).

The project aims at improving the food security of poor rural households through food-for-work support to the rehabilitation of minor irrigation schemes and through strengthening their knowledge and skills necessary to manage water resources and maintain the assets.

Food rations (rice, pulses and sugar) will be provided to the households of 26,400 landless labourers and small-scale farmers who take part in rehabilitation and training activities carried out during the labour lean period. A total of 15,918 tons of food will be distributed. Through a mechanism which self-targets the poorest, about 60 percent of the food recipients will be women.

The Department of Agrarian Services (DAS) of the Ministry of Agriculture and Lands will assume implementation responsibility. The project will increasingly focus on the poorest districts, selected on the basis of WFP's Vulnerability Analysis and Mapping (VAM).

Following the recommendations of a WFP/FAO appraisal mission in May 1999, a participatory project approach will be adopted. This will require the training of relevant stakeholders in participatory techniques and the forging of linkages and partnerships with Government agencies, NGOs and community-based organizations. Community needs identification and mobilization will be conducted prior to any rehabilitation works, improved technical and social criteria for selecting tanks will be applied, and community awareness about irrigation scheme maintenance will be raised. This is expected to strengthen the local communities' sense of responsibility for the assets created and thus ensure the project's sustainability. Evaluation studies will be carried out in order to establish the project's effects on household food security. Special efforts will be made to increase women's participation in decision-making within farmers' organizations: as in the ongoing project, 30 percent of their members will be women, but in this expansion at least two women will be on all executive committees, and special empowerment training will be provided to female office holders.

NOTE TO THE EXECUTIVE BOARD

This document is submitted for approval by the Executive Board.

The Secretariat invites members of the Board who may have questions of a technical nature with regard to this document, to contact the WFP staff focal points indicated below, preferably well in advance of the Board's meeting.

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Should you have any questions regarding matters of dispatch of documentation for the Executive Board, please contact the Documentation and Meetings Clerk (tel.: 066513-2641).

ACRONYMS USED IN THE DOCUMENT

ASC	Agrarian Service Centre
AHFSI	FAO Aggregate Household Food Security Index
CAA	Catchment Area
CI	Cropping Intensity
COA	Command Area
COPR	Country office project report
DAS	Department of Agrarian Services
EEC	European Economic Commission
FCD	Food Commissioner's Department
GTZ	German Technical Cooperation
IIMI	International Irrigation Management Institute
LCD	Land Commissioner's Department
LIFDC	Low-income, food-deficit country
PIR	Project Implementation Report
QPR	Quarterly Progress Report
VAM	Vulnerability Analysis and Mapping
WA	Water Spread Area

PROBLEM ANALYSIS

1. Sri Lanka is a low-income, food-deficit country (LIFDC) of 18 million people, with an average yearly per capita income of US$670. Nearly two decades of economic reforms have not been able to arrest the poverty problem in Sri Lanka. On the basis of the World Bank's "dollar a day" criterion, 35 percent of Sri Lankans are estimated to live below the poverty line. These estimates exclude those 16 percent of the population living in the North and East of the country which has been subject to civil strife for over 15 years. Hence, the proportion of the poor is probably underestimated. The UNDP Human Development Index is 0.716. In 1998, Overseas Development Assistance to Sri Lanka was US$823 million; the total food aid received amounted to 31,592 tons, of which 37 percent came from WFP.

2. Rice and wheat together make up nearly 60 percent of the Sri Lankan diet. Notwithstanding continuous efforts to become self-sufficient in rice, nearly 45 percent of the cereal requirements are met through imports. After a bumper paddy harvest in 1995, when output climbed to 2.8 million tons, a severe drought in 1996 reduced production to 2.1 million tons—the lowest recorded since 1979. Production recovered to 2.2 million tons in 1997, but was still far short of consumption requirements. In general, food availability has been low; the daily dietary energy supply was 2,260 Kcal in 1998. The AHFSI was 84.7 for the period 1993–95. The under-5 mortality rate stood at 22 per 1,000 for males and 20 per 1,000 for females in 1998, and almost 38 percent of expectant mothers were anaemic.

3. There is a high level of malnutrition in the country. Wasting (insufficient weight-for-height) affects 14 percent of children under 5; 34 percent are undernourished (inadequate weight-for-age). The causal factors are not well understood. Seasonal food deficiency may be reflected in the data related to wasting, but other poverty-related factors are likely to play a role as well. The adult population also suffers from chronic energy deficiency. More than a third of the population are undernourished (33 percent of women and 37 percent of men).

4. According to the 1998 Human Development Report, there is a lack of empowerment for women in Sri Lanka. Women have attained only 69 percent of the human development level achieved by men, and possess a mere 31 percent of the level of economic and political decision-making power enjoyed by men.

5. Women's participation in formal and technical economic activities is low, which is caused primarily by inadequate training opportunities, predominance of conventional norms regarding women's roles and occupations, lack of opportunities and lack of assets, but also lack of awareness and cumbersome legal procedures. In 1994, only 29 percent of the women were in the labour force. The share of earned income for women was only 25 percent compared with 75 percent for men. Lower wages for rural women in agriculture and other sectors are common.

6. Nevertheless, the status of women in Sri Lanka is considerably better than in other South Asian countries, because of a high concern for social equity and strong investments in the social sector. In 1992, the life expectancy for women was 74.2, higher than that for men, at 69.7. The number of children per woman was only 2.3 in 1995. The adult literacy rate in 1990 showed relatively little gender gap: 86 percent of women were literate compared with

93 percent for men. Hence, in Sri Lanka, there is a great opportunity to work with women and men together on development activities, drawing on the literacy and skills of both.

7. About 80 percent of the poor live in rural areas; they are predominantly small-scale farmers and landless labourers. Their food security is highly dependent on rainfall patterns. In parts of the dry (annual rainfall of 900 to 1,500 mm) and intermediate (1,500 to 2,200 mm) zones where this project will operate, paddy cultivation is limited to *Maha*,[1] the main rainy season. Even in this season, crops may not succeed unless water can be stored to supplement the rains towards the end of the cultivation season.

8. In the dry zone where *Yala* cultivation does not take place without irrigation facilities, the labour lean season sets in from April to September. During the period from April to July employment opportunities are scarce, but farmers and labourers generally still have food stocks or some cash reserves. The most difficult time of the year for poor rural households is the period from August to October, because there are no rice stocks left, and outside areas with major irrigation systems there are no employment opportunities. This is the food-insecure period of the year.

9. Minor irrigation water reservoirs, so-called "tanks"[2], scattered throughout the dry and intermediate zones, serve to store rain water and supplement the rainfall towards the end of the *Maha* and during the *Yala* season. This widespread tank-based irrigation system has a long history in Sri Lanka and has evolved over generations. The reservoirs store the seasonal rainfall that provides water for agricultural production, animal husbandry, and domestic purposes.

10. Island-wide, there are about 22,000 minor irrigation schemes with a total command area of approximately 240,000 hectares. More than two thirds of this command area is located in the dry zone.

11. In many cases a gradual dilapidation of the minor irrigation schemes can be observed as communities have failed to maintain and repair adequately the irrigation head works and distribution canals. Management practices followed over centuries deteriorated and finally fell completely into disuse due to a decline in the real incomes of small farming households, changes in the legal framework relating to the ownership of the irrigation structures, as well as frequent changes in operational responsibility for these schemes. Now the sense of community ownership of and responsibility for the irrigation infrastructure is no longer strong enough to guarantee their maintenance.

12. The neglected tank systems have a negative effect not only on agricultural production, but also on the domestic use of water. With tank water levels becoming low or even drying out in the dry season, households cannot find sufficient water for their livestock and their daily bathing and washing. Even homestead wells tend to dry up during drought periods. Women are the most affected by this situation, as they generally carry out all the water-related animal husbandry and domestic work. When no water is available, they have to fetch it from further away places.

13. Due to irregular rainfall, recurrent drought and neglect in maintaining irrigation infrastructure, the agricultural productivity of small-scale farming households has declined

[1] The *Maha* agricultural season (North-East monsoon) is typically from October to February and provides abundant rain to the whole of the island; the *Yala* season (South-West monsoon) extends from April to June and rainfall is mainly limited to the wet and intermediate zones.

[2] Defined as having a command area of up to 80 hectares.

over the past decades; they now regularly experience seasonal food shortages. However, a comparatively large menu of coping strategies is available and applied in the rural areas. In the short term, the households cope by increasing their dependency on state safety nets (*Samurdhi*,[1] drought relief, etc.) and welfare, by raising credit against future crops, or by engaging in casual labour. As an intermediate coping mechanism, they revert to home garden crops, such as manioc, fruits and vegetables. Many of them also supplement their reduced incomes by practising *chena* (slash and burn) cultivation, causing environmental damage, soil erosion and local climatic change. As a last resort they reduce their daily food intake.

14. Government priority is shifting from the long-standing policy of construction of large-scale irrigation schemes to the rehabilitation of minor irrigation schemes. During 1984–89, the DAS obtained World Bank assistance for a Village Irrigation Rehabilitation Project for the rehabilitation of 1,072 minor irrigation schemes. Based on this experience, a second World Bank/EEC co-assisted National Irrigation Rehabilitation Project commenced in 1992 and restored some 1,000 minor irrigation schemes. Another 1,600 such schemes were rehabilitated under the Integrated Rural Development Project with financial assistance from bilateral donors. The lack of involvement of the local communities in the planning and execution of these operations deprived them of ownership of the schemes. This, coupled with a lack of knowledge, skills, experience and appropriate organization, resulted in a disinclination to invest time and resources in maintenance.

15. Farmers' organizations concerned with the rehabilitation of minor irrigation schemes and water distribution issues have been newly established in many villages, but due to local social and political friction, they are not yet effectively functioning.

PREVIOUS WFP ASSISTANCE

16. Project Sri Lanka 4521.00—Rehabilitation of Minor Irrigation Schemes—commenced in March 1994 and will terminate in December 1999. The total cost to WFP amounted to US$8.3 million (revised to US$10.9 million); the Government cost was estimated at US$4.3 million.

17. The objective of improving the food security status of poor small-scale farmers through increased incomes and employment was to be achieved through:

a) rehabilitation of 760 minor irrigation schemes (revised to 885);

b) improvements to 380 km of tank access roads;

c) training of farmers and farm leaders;

d) construction of multi-purpose buildings;

e) establishment of demonstration plots; and

f) engagement of institutional organizers to strengthen farmers' organizations.

18. The project originally covered eight districts and was expanded in 1997 to include three additional conflict-zone border districts. By the end of May 1999, some 93 percent of its physical (infrastructure) target had been achieved with the rehabilitation of 828 tanks. As assessed by a WFP/FAO appraisal mission in May 1999, the technical quality of

[1] Government's Poverty Alleviation and Welfare Programme.

rehabilitation work is generally good and the immediate agricultural production impact on local communities has been significant. With water availability assured, cropping intensities and paddy yields have increased; many farmers are now able to harvest a second crop during the *Yala* season.

19. From 1994/95 to 1997/98, the command area under the rehabilitated tanks increased by 8 percent, from 15,828 ha to 17,030 ha. Annual cropping intensity increased from 87 to 120 percent and paddy yields from 3 to 4 tons/ha. In this period the number of farmers' organization members increased by 25 percent, from 31,305 to 39,184, while the proportion of male and female members remained about the same, i.e. 70 percent and 30 percent, respectively. The funds of farmers' organizations increased by more than 150 percent during the same period (from Rs. 2.1 million to Rs. 5.3 million, against an average yearly inflation rate of 10 percent during the period).

20. The project did not specifically target women. Nevertheless, women have contributed 55 percent of the labour force involved in tank rehabilitation works. The proportion of women involved in earthwork is high due to their relatively lower opportunity costs compared with those of men. Thirty percent of the members of local farmers' organizations are women. DAS has also encouraged that there be two women in the executive committees of all farmers' organizations. Female representatives at the level of the Agrarian Service Centre are, however, still very rare. Although women usually attend meetings of farmers' organizations, many of them are not active; this might be because they are hesitant to speak in front of a larger group presided by the male village elite, or because the decisions taken are mainly about irrigation of paddy cultivation, which remains a male focus (although the entire household works on it), while women's economic domains are homestead gardens and livestock.

21. No assessment of the impact on community livelihood, incomes, food security, etc. can yet be made. Such an undertaking would necessitate a household-level baseline survey and an appropriate methodological approach in order to determine and assess the effect of the changes brought about by the project.

22. The appraisal mission noted the important role of institutional organizers (30 percent females) in assisting farmers' organizations in tank rehabilitation planning. The mission also endorsed the organizers' assessment of critical constraints in their work and the requirement for training in areas such as communication, teaching, motivation, and appropriate technical skills for business development and agricultural technology.

23. The mission concluded that although community development planning, institution-building and farmer training fall within the purview of DAS, the latter does not yet possess the human resources required to perform these functions. During the expansion, the project would need to strengthen these human resources. Another important consideration is that the efficient and timely execution of certain activities in these fields, such as agriculture extension and marketing, although crucial to project success, has not been under DAS control (though DAS has recently recruited graduates in agricultural studies as extension workers). Hence there is a need to identify relevant agencies and put in place institutional arrangements to ensure their participation.

24. Overall, the appraisal mission identified the need for a more participatory approach, giving due attention to all stakeholders in the project (men and women of the community, the farmers' organizations, institutional organizers, DAS extension workers) and linkages with other community-based organizations. This approach should include emphasis on

community sensitization, mobilization and development, and familiarization of DAS staff with participatory approaches.

25. In order to address the crucial issue of sustainability of the assets created, the appraisal mission identified the following principles that should guide the expansion phase of the project: a) communities and their organizers should be able and willing to carry out normal tank operation and maintenance tasks; b) the surplus accrued from the agricultural production activities should be sufficient to finance maintenance activities; and c) communities should be able to apply adequate watershed management practices.

26. Since project 4521.00 was originally prepared, there has been no substantial change in the parameters of the problem that it was designed to help solve. The appraisal mission therefore concluded that the project's objectives retain their relevance and validity. With gradual modifications towards a community-oriented participatory approach and by establishing the required institutional linkages, the project was considered to be consonant with WFP's development priorities, as decided by the Executive Board at its Annual Session of 1999. In accordance with that decision, this project focuses on objectives 3, 4 and 5 (make it possible for poor families to gain and preserve assets; mitigate the effects of natural disasters, in areas vulnerable to recurring crises of this kind; and enable households which depend on degraded natural resources for their food security to make a shift to more sustainable livelihoods).

PROJECT OBJECTIVES AND EXPECTED OUTPUTS

Long-term Objectives

27. The project's development goal is to improve the food security of small-scale farming households, mainly through increasing and stabilizing their household food production. This is to be accomplished by providing male and female farmers, their communities and organizations with the food assistance needed to rehabilitate their minor irrigation schemes as well as with the knowledge and skills necessary to manage properly the rehabilitation work, the water resources available to them, and to operate and maintain the schemes under their control on a self-sustaining basis.

Immediate Objectives

28. The immediate objectives are to:

a) ensure adequate access to food and cover for income foregone while small-scale farming households invest their time and resources in tank rehabilitation and other community-oriented activities;

b) increase water availability to small-scale farming households for irrigation, animal husbandry and domestic purposes and thus enable them to cultivate during the *Yala* season, and make them less vulnerable to droughts which may otherwise even hamper the completion of the *Maha* season;

c) raise awareness, stimulate community spirit, and impart knowledge and skills necessary to manage and maintain the assets created and to appreciate the benefits of diversified agriculture that includes higher value crops; and

d) increase the effectiveness of farmers' organizations, especially strengthening the participation of women in their decision-making process.

Outputs

29. The project is expected to result in the following outputs, based on the provision of food-for-work rations for a total of 5.4 million workdays over a period of three years. A yearly breakdown of project outputs, wo2rk norms and workdays is shown in Annex III.

30. The following physical assets will be created, mainly through food-for-work activities:

Assets created	Workdays[1]	Percent of total workdays	Activities
1. 660 minor irrigation schemes with a combined irrigation area of 15,840 ha	4 300 000	79.5	Earthwork for i) Head works: rehabilitation and reconstruction of bund sluices and spill ways, turfing the bunds, de-silting tank beds, filling embankment breaches and erosion gullies. ii) Downstream development: rehabilitation and reconstruction of main canal and feeder channels.
2. 330 km of improved access roads to the minor irrigation schemes	363 000	6.7	Earthwork for the construction and improvement of access roads to the irrigation schemes; including the widening of existing tracks, gravelling and provision of small culverts.
3. 165 multi-purpose community buildings to store agricultural tools/implements, and to provide office and meeting space for farmers' organizations and other village groups.	132 000	2.4	Construction work (800 workdays per building for which food aid will be provided and a Government contribution of Rs.160,000 per building).
4. 660 field crop demonstration plots to demonstrate the efficacy of diversified agriculture.	26 400	0.5	Earthwork for the establishment of crop demonstration plots (one for every minor irrigation scheme).
5. Miscellaneous community infrastructure emerging from community requests	265 800	5	Possible activities could be digging wells, construction of bathing steps etc.
Total physical assets	**5 087 200**	**94.1**	

[1]For each workday a ration consisting of 2.5 kg of rice, 0.3 kg of pulses and 0.15 kg of sugar will be provided.

31. The implementation of the miscellaneous community infrastructure is to be organized with the assistance of NGOs or community-based organizations and/or relevant Government agencies. Special attention will be given to requests that come from women's groups and those relating to activities and processes which strengthen the households, and communities' ability to better cope with drought.

32. Food will also be provided as an incentive to attend training sessions and as remuneration for institutional organizers:

a) **Training (145,200 work/training days, i.e. 2.7 percent of the total workdays).** Training will be provided for farmers and group leaders on community development as well as operation and maintenance issues. Special training for women will cover various subjects related to project activities including those resulting from the participatory needs identification process. At least 30 percent of the farmer trainees will be women. In the training they will be especially encouraged to take a more active role in their farmers' organization. Empowerment cum management training will be provided to at least 300 female office holders (president, secretary and treasurer) of the farmers' organizations.

b) **Assistance to services provided by 160 institutional organizers (172,800 workdays i.e. 3.2 percent of the total workdays**).The social organization of farmers is not a spontaneous process. Sensitizing farmers and raising awareness for management and maintenance activities as well as acting as a catalyst for change and a conduit between the farmers, the farmers' organizations, and the project authorities will be the responsibility of the institutional organizers.

33. WFP will work towards associating other community-focused activities with the rehabilitation of the irrigation infrastructure. This will depend, however, on the results of the communities' priorities identified by the third year of project operations. Funding will be sought for these activities from other donors and they will be implemented through collaborative partnerships with other agencies.

ROLE AND MODALITIES OF FOOD AID

Functions

34. On average a labourer works on the scheme and receives food rations for about 204 days a year (from April to July and then again from November to February). Food aid will augment the household food intake during the labour lean period from April to July, carrying over cash savings and food stocks into the food insecure period from August to October. Food aid will also represent an income transfer allowing labourers to stay near home and build assets leading to long-term food security. Food as a resource is deemed particularly appropriate in respect of the targeted beneficiaries' food insecurity, their exposure to malnutrition, the large share of income expenditure on food and the observed positive alpha values.[1]

Food Inputs and Commodity Justification

35. The commodity types and amounts included in the household/family ration per working day in the original project 4521.00 were rice (2.5 kg), pulses (200 grams), sugar (100 grams), and canned fish (50 grams). This food basket has been modified taking into consideration the following factors:

a) harmonization of commodity types with those in use in the other WFP-assisted project in the country, i.e. PRRO 6152.00—Relief and Recovery Assistance to Internally

[1] The local value of a WFP daily household/family ration works out to US$1.15 while its cost to WFP at the delivery point to beneficiaries is US$0.9. This provides a cost effectiveness (alpha) value of 1.27. These values do not change significantly from one place to another where WFP projects are in operation.

Displaced Persons in Sri Lanka—, in order to allow flexibility should the pipeline be disrupted;

b) comparability with recovery rations under PRRO 6152.00 to ensure that beneficiaries receive similar rations for similar activities;

c) replacement of small quantities of high-value commodities (like canned fish) by larger quantities of lower-value basic commodities (like pulses); and

d) increased cost-effectiveness of rations containing a limited number of commodities.

36. The revised daily household/family ration under project 4521.01 will therefore include: 2.5 kg of rice, 300 grams of pulses, and 150 grams of sugar. This is acceptable to the implementing agency as well as the beneficiaries. Assuming an average number of 5 persons per household, the nutritional value of the ration is equivalent to about 2,124 Kcal, 47 grams of protein and 2.9 grams of fat per person per day.

37. A total of 5.4 million household/family rations will be required for the 3-year duration of the project, i.e. 1.8 million household/family rations a year. The commodity types, ration scales and amounts required are as follows:

COMMODITY REQUIREMENTS

	2000	2001	2002	Total 2000–2002
Rice: (2.5 kg/workday)	4 496	4 496	4 496	13 488
Pulses: (300 grams/workday)	540	540	540	1 620
Sugar: (150 grams/workday)	270	270	270	810
Total commodity requirement (tons)	**5 306**	**5 306**	**5 306**	**15 918**

38. For each day of work, the participating community member will be provided a household/family ration. At current market prices in the rural areas, the value of a daily household/family ration is Rs. 80 (US$1.13). When casual employment is available in the rural areas, the daily wage for unskilled labour is around Rs. 150 (US$2.12) for women and Rs. 175 (US$2.48) for men. Considering the nature of work, which creates assets for small-scale farmers, the income transfer effect of WFP assistance is sufficient to attract an adequate workforce to the project. In view of the limited and irregular demand for unskilled labour, particularly during the lean season, the value of the food basket is just below the opportunity cost of unskilled labour.

PROJECT STRATEGY

Implementation Strategy

39. The DAS of the Ministry of Agriculture and Lands will assume overall implementation responsibility for the project and the technical execution of tank rehabilitation. In Expansion 1, increased emphasis will be placed on community sensitization, mobilization, and participatory activities. The efficient and effective conduct of these activities will require the training of relevant stakeholders in participatory identification of needs, planning, and decision-making concepts and techniques. In addition, it will need the

forging of linkages and partnerships with relevant Government agencies and community-based organizations working in the project area, as well as the creation of collaborative mechanisms at all levels. This is a new focus to WFP's involvement in development activities in Sri Lanka. Therefore, a phased approach is required.

40. Given that DAS' project implementation plan and the national budget allocations for 1999–2000 have already been fixed, the first phase of operational changes resulting from the application of the revised selection criteria, as described in Annex IV cannot be introduced until the 2000/2001 work season. However, for this to happen, the tank inventory (technical and socio-economic profiling study paid from the Government's budget) as well as the training needs analysis (covered from WFP's budget) will be carried out as project preparation before the end of the first quarter of 2000, so that the results can be taken into account in the preparation of the DAS budget for 2000–2001.

41. In order to better understand the changes the project has made so far in people's lives, their attitude and actions towards maintaining the assets created, and to prepare for an appropriate participatory planning process, it is of prime importance that a household-based study of a limited sample of earlier WFP-assisted village communities (under project 4521.00) is carried out before the end of the first quarter of 2000.

42. In a second phase (from 2000/2001), the revised selection criteria, including the cascade[1] approach wherever appropriate, will increasingly be applied. The number of tanks (660) envisaged is thus to be considered principally as a figure for planning purposes and may be revised. The most important output of this project is not the absolute number of tanks rehabilitated, but rather the number of minor irrigation schemes, in respect of which the relevant communities have assumed effective responsibility for operation and maintenance.

43. The Agrarian Service Act was amended in 1991 to empower DAS to register farmers' organizations as legal entities and recognize their role in the operation and maintenance of minor irrigation schemes. Accordingly, under this project eligible farmers' organizations will sign an agreement with DAS on a voluntary basis to take responsibility for rehabilitation, operation and maintenance of the scheme.

44. During the second phase stakeholders will be trained in participatory approaches, and linkages/partnerships with relevant Government agencies, NGOs and community-based organizations will be established.

45. From 2000/2001, DAS will prepare an annual work plan and an implementation schedule at the beginning of each year in consultation with the respective farmers' organizations. These plans will include details of capital-intensive works to be carried out with Government funding, and the rest of the labour-intensive activities and training to be assisted by WFP. These plans/implementation schedules will be reviewed and implementation guidelines formulated by a project committee chaired by the Secretary of the Ministry of Agriculture and Lands with the participation of DAS, WFP and other agencies collaborating with the project.

46. In the course of the first two years of project implementation a modus will be worked out on how local community needs and views will be increasingly incorporated into the process of preparing the yearly work plan. Respective technical advisory services may be required.

[1] Tanks are part of a cascade system when surplus water from a tank located in the upper catchment flows to another tank downstream (share the same watershed).

47. In order to introduce this new approach studies have to be carried out, training needs determined, training given, collaborative mechanisms with Government agencies, NGOs and community-based organizations put in place and the DAS budget modified. Thus, the first participatory needs identification and community resource appraisal and planning processes are expected when preparing the third year of project operations, leading to a fundamental change process from a "technology-driven, top-down approach" to a "community-centred, bottom-up approach".

48. Another consequence of the participatory approach will be that communities may or may not choose tank rehabilitation as a first priority; this may thus result in some change in the number of minor irrigation schemes to be rehabilitated. If participants do choose tank rehabilitation, then the WFP-assisted project comes in. If, however, they opt for other priorities, they will be linked to required support through the collaborative mechanisms in place.

49. WFP assistance will be linked with the inputs and programmes of collaborating partners in various aspects of the project. NGOs and community-based organizations will be identified for required community development support. IFAD will contribute to the funding of rehabilitation activities, contribute to strengthening the farmers' organizations and provide complementary assistance in the areas of training and various income-generating activities. A significant portion of United States bilateral assistance to Sri Lanka has been earmarked in 1999 for utilization in WFP-assisted development projects. The procurement of machinery and equipment required for the rehabilitation of irrigation schemes, establishment of a revolving credit fund for farmers' organizations as well as nutrition education are areas for possible utilization of these funds. WFP-assisted minor irrigation schemes in the Eastern Province will also benefit from the technical assistance to be provided by German Technical Cooperation (GTZ) for improving the technical capacity of the Government's implementing agency.

Food Logistics

50. All food commodities will be shipped to the port of Colombo. The clearance of the consignments is the responsibility of the Government. Rice will be stored at the Food Commissioner's Department (FCD) stores; the other commodities—pulses and sugar—will be stored at the Ratmalana (Colombo) stores of the Land Commissioner's Department (LCD). DAS will collect the monthly requirements of rice from the nearest FCD stores and other commodities from the LCD stores in Ratmalana and arrange transport to the Agrarian Service Centre (ASC) nearest to the project site. The farmers' organizations are responsible for transporting commodities from the ASC to the project sites for distribution. The Government will bear all costs involved in handling, transportation and storage of the food up to the ASC level.

Generated Funds

51. Funds generated from the sales proceeds of empty food aid sacks and containers will be deposited in an interest-bearing account established under the first phase of the project. The account will be managed by the Commissioner of Agrarian Services, with the concurrence of the project's steering committee. Funds will be utilized for activities that directly support the project's implementation or directly reach the target beneficiaries. Preference will be given to financing staff and material for income-generating and/or vocational training activities for women according to their project-related needs.

BENEFICIARIES AND BENEFITS

Targeting

52. The value of the food ration is about half of the agricultural wage for women (Rs. 150) in the project area. Hence, there is strong self-targeting towards the poorest communities and to the weaker sections of these communities. The project is thus expected to be particularly attractive to women, whose opportunity costs are lower because of limited mobility (due to domestic and family obligations) and disadvantages on the labour market.

53. From 2001/2002 the project will increasingly be implemented in the poorest districts of the country. They will be selected on the basis of VAM criteria that will include food security and vulnerability indicators. Within the selected poorest districts, the revised tank selection criteria will take into account socio-economic factors in addition to technical criteria (as per Annex IV). They will be considered in the by then completed inventory of schemes, which takes account of cascades wherever appropriate. The socio-economic factors will ensure that those who work in tank rehabilitation actually come from the village community, are farmers and belong to the poorest strata. They should be members of farmers' organizations that have taken full responsibility for the operation and maintenance of each tank.

54. The tank hydrological indicators developed by the International Irrigation Management Institute (IIMI)[1] will be applied to determine water availability and command areas (see Annex IV). This will increasingly be done in the context of awareness raising so that internal conflicts over resource allocation decisions may be resolved through informed discussion within the communities involved. The selection of tanks on a cascade basis may result in the inclusion of tanks with command areas of less than 10 ha. Such tanks have not been rehabilitated, following the recommendations of the 1996 WFP/FAO management review mission. However, some of the poorest farmers own land in small command areas of 5–10 ha and, hence, rehabilitation of these schemes cannot be ignored.

Anticipated Effects of the Project on Women

55. The WFP country office, together with the implementing Government agency DAS, has worked towards meeting a number of targets for an increased involvement of women in project activities as laid out in the WFP Sri Lanka Gender Action Plan which is based on WFP's Commitments to Women. For Expansion 1 the new respective targets include:

a) ensuring that at least 60 percent of project participants (out of a workforce of 26,400 persons) are women;

b) ensuring 30 percent female membership in all farmers' organizations newly supported by the project;

c) ensuring that at least 30 percent of the farmer trainees will be women and that empowerment cum management training will be provided to at least 300 female office holders of the farmers' organizations;

d) raising the proportion of women among the institutional organizers from 30 percent to 50 percent;

[1] International Irrigation Management Institute, IIMI Country Paper, Sri Lanka No. 13, 1996.

e) making it mandatory for executive committees of the farmers' organizations to have at least two women among their members; and

f) pursuing the target of having at least one female representative at the ASC level.

56. The achievements as well as the new quantitative targets in terms of representation of women at various levels of project implementation are impressive. Reaching a proportion of 60 percent women in the workforce of a rural infrastructure project will be already an achievement. As a consequence, food is directly distributed to the women workers, which places an important resource under their control. It may also be assumed that food in the hands of women generally has a positive effect on the food security of all household members.

57. Because women's active participation and influence in decision-making bodies have not yet been very strong, further awareness and empowerment training will be required. A gender training component will also need to be included in all counterpart staff training activities in order to strengthen the gender awareness of all project staff.

PROJECT SUPPORT

Landside Transport, Storage and Handling (LTSH)

58. All LTSH costs will be borne by the Government.

Non-food Items

59. No heavy machinery nor outside labour or contractor will be employed for the project. Therefore, it is essential that WFP provide agricultural tools and implements such as hoes, shovels, slasher knives and cane baskets to the farmers' organizations. The cost of these non-food items, required for the 3-year expansion phase, is estimated at US$240,000. In addition, for repair and maintenance of the minor irrigation schemes, it will be important to make available against a small rental charge the equipment required through the Agrarian Service Centres (29 workshops are proposed to be set up in the project area for this purpose). There is also need for a 20–30 seater bus for transporting trainees to and from the training centres; 160 bicycles for the institutional organizers; and various training aids. The total estimated cost of these items is US$90,000.

Monitoring and Evaluation (M&E)

60. Monitoring and reporting of the project's progress will follow WFP procedures on a gender-disaggregated basis, i.e. quarterly progress reports (QPR) on food distribution and the number and type of beneficiaries; and six-monthly project implementation reports (PIR). The information for these PIRs will be collected by project field staff using reporting formats. For this project expansion the formats will be selected from the existing ones, some of which may need to be redesigned by DAS in consultation with WFP according to the recommendations of the 1999 appraisal mission. Qualitative information and assessments of the project situation will be added as a basis for management decisions. This information will be summarized on a biannual basis to prepare the WFP country office project report (COPR).

61. To evaluate the effects and impact of the project, two activities will be undertaken. First, a team of local experts engaged by WFP will carry out a sample survey and participatory

rural appraisals within the first quarter of 2000. The sample will be taken from tanks rehabilitated in 1997/98. The study will focus on:

a) establishing household profiles of male and female project participants (labourers on the schemes); indicators will be household composition, land ownership and ownership of selected other assets;

b) identifying the degree of involvement of households (number of total man- and woman-days) on the schemes and the corresponding income earned;

c) identifying social and economic changes as well as changes in the food security situation that have occurred in the labourers' households as well as in those of other community members which may be attributed to the rehabilitation of the minor irrigation scheme (tank); and

d) providing an initial assessment concerning the determinants of project success/failure in terms of creating lasting assets for the livelihood of project participants (labourers) and their household members as well as other members of the local communities.

62. This study will yield benchmark values in relationship to the achievements of the original project's long-term objective. It will also assess how the rehabilitated minor irrigation schemes fit into the communities' overall changes in economic position and food security, how effectively the farmers' organizations operate, and how the sense of ownership of the minor irrigation schemes develops over time. This should also permit an assessment of the effects of the project on those 30 percent of the labourers who are not farmers.

63. Secondly, a new baseline study will be carried out in early 2001 in areas where the new project approach has been applied. Follow-up effect/impact evaluation studies will be conducted in communities around the same tanks towards the end of the project period, i.e. end 2002. The main indicator will include household food production from irrigated lands under the rehabilitated tank. Proxies may include areas cultivated, yield, cropping intensity and cropping pattern. Using local farm-gate prices, incomes will be calculated and compared to baseline data and to district values used under the vulnerability assessment for spatial targeting.

64. Finally, there will be an external evaluation of the project at the end of this three-year phase in order to determine how far the project was able to adopt the new community-centred participatory approach and how successful this approach has been in achieving the objectives in light of WFP's new development priorities.

PROJECT FEASIBILITY AND SUSTAINABILITY

65. The expansion phase of project 4521.00 was appraised by a joint WFP/FAO appraisal mission that visited Sri Lanka in May 1999. The mission comprised an economist, a community development cum gender specialist, an irrigation engineer and the WFP Programme Coordinator. The new phase will focus more on incorporating participatory elements into the project approach, and thus expects to strengthen the community ownership of the structures created so that the communities will operate, repair and maintain them in a sustainable manner without further outside rehabilitation assistance.

Environmental Considerations

66. The project will contribute to alleviating existing environmental problems connected with drainage and tank siltation. The rehabilitation of existing minor irrigation schemes and canals will improve the flow of water, thereby reducing the risk of water-borne diseases. Siltation of tanks and canals is caused by soil erosion in the immediate catchment areas, which reduces the tanks' capacity. Through a collaborative partnership, it is expected that other agencies will implement reforestation of the catchment area and thus soil erosion may be reduced.

67. Slash and burn (*chena*) cultivation is widespread throughout the dry and intermediate zones and is practised by farmers to complement their food production under irrigated land. Through greater productivity in the irrigated land, the pressure on the surrounding environment is expected to decrease.

RISKS

68. Prolonged periods of drought, as has been the case for a number of years in the nineties, may affect progress of implementation and attainment of some of the objectives. Demonstration plots cannot be established during periods of drought; moreover, excavation activities in the tank bed, due to hardening of the topsoil, may require more effort than foreseen. It is also clear that although the restoration of tanks may fulfil all technical requirements, targets of increased yield and expansion of area cultivated may not be achieved in periods of drought. Although physical activities are planned to take place during the lean season, periods of excessive or delayed rains may result in lower than expected project participation due to farmers' other work priorities. This risk is, however, expected to be minimized by the community participatory needs identification process that will ultimately precede all activities. This process will also generate insights into the households' drought coping patterns and help identify activities that strengthen these response mechanisms.

69. The proposed WFP-assisted activities are to be supplemented by Government counterpart funding. Past experience shows that on average one third of the project value is contributed by the Government counterpart. The Government's contribution covers the implementation costs of the project, a cash component for structural requirements, and the internal transport cost of the food. Delays in disbursement of the counterpart funds and other limitations of implementation capacity may affect the scope, progress of activities and attainment of overall project objectives.

70. Further risk factors are that the planned linkages with NGOs and community-based organizations cannot be established, or that external pressures and continued friction within farmers' organizations do not allow a community-based approach. DAS staffing may also not be sufficient in number and capacity to meet the requirements of the new approach.

DISINCENTIVES, DISPLACEMENT AND DEPENDENCY

71. Food provided under the proposed project is expected to neither cause disincentives to local food producers nor to displace any production and consumption patterns. The targeted population's food consumption during the labour lean season is low, and even lower during the subsequent food insecure period. Hence, households are not likely to sell any food provided by the project. Food aid is expected to contribute to saving food expenses during

the earth works period. It is largely additional to current intake and can be partly stretched over the food-insecure period. Consequently it will not influence household food expenditure and food demand significantly.

72. Food distribution is unlikely to create any dependency among the participants as the period of intervention is short (204 days per labourer) and only a one-time opportunity. Moreover, commodities correspond to those available from local markets.

PROJECT COSTS

73. A comprehensive breakdown of the project's cost is provided in Annexes I and II. The total cost to WFP amounts to US$6.8 million, with a food cost of US$4.3 million. Other operational costs amount to US$468,000; these include the provision of hand-tools, training needs analysis as well as actual training of beneficiaries and implementing partners and means of transportation to training. Direct support costs are estimated at US$639,000. The direct support costs include adequate provision for new components such as Vulnerability Analysis and Mapping, security requirements and the cost of effect/impact evaluation studies as well as an external evaluation.

74. The Government's contribution is estimated at US$3.7 million, and covers all LTSH costs, structural costs for tank rehabilitation, staffing costs related to identification, implementation, monitoring, reporting and training and administrative costs. The costs related to establishing an inventory of tanks eligible for rehabilitation at the onset of the project period, as recommended by the 1999 appraisal mission, have been taken into account.

RECOMMENDATION OF THE EXECUTIVE DIRECTOR

75. The project is recommended for approval by the Executive Board within the budget provided in Annexes I and II.

ANNEX I

PROJECT COST BREAKDOWN

	Quantity *(tons)*	Average cost per ton	Value *(dollars)*
WFP COSTS			
A. Direct operational costs			
Commodities[1]			
– Rice	13 488	250	3 372 000
– Pulses (lentils)	1 620	450	729 000
– Sugar	810	250	202 500
Total commodities	**15 918**	**270**	**4 303 500**
External transport		37	588 825

PROJECT COST BREAKDOWN

	Quantity *(tons)*	Average cost per ton	Value *(dollars)*
Other direct operational costs		29	468 000
Subtotal direct operational costs			**5 360 325**
B. Direct support costs (see Annex II for details)			
Subtotal direct support costs			**639 000**
Total direct costs			**5 999 325**
C. Indirect support costs (13.9 percent of total direct costs)			
Subtotal indirect support costs			**833 906**
TOTAL WFP COSTS			**6 833 231**
GOVERNMENT COSTS			**3 700 000**
TOTAL PROJECT COSTS (WFP and Government)			**10 533 231**

[1] This is a notional food basket used for budgeting and approval purposes. The precise mix and actual quantities of commodities to be supplied to the project, as in all WFP-assisted projects, may vary over time depending on the availability of commodities to WFP and domestically within the recipient country.

ANNEX II

DIRECT SUPPORT REQUIREMENTS *(dollars)*	
Staff costs	
International	339 000
National Professional Officers	57 000
Local staff and temporaries	33 000
Subtotal	**429 000**
Technical support services	
Project preparation	10 000
Technical advisory services	10 000
Project monitoring and evaluation	78 000
Training	7 500
Subtotal	**105 500**
Travel and DSA	
Blanket travel	9 000
In-country travel	15 000
Subtotal	**24 000**
Office expenses	
Rental of facility	6 000
Communications	7 500
Office supplies	2 250
Equipment repair and maintenance	2 250
Subtotal	**18 000**
Vehicle operations	
Vehicle fuel and maintenance	15 000
Subtotal	**15 000**
Equipment	
Vehicles	25 000
Computer equipment	7 500
Subtotal	**32 500**
Other	
Public information	15 000
Subtotal	**15 000**
TOTAL DIRECT SUPPORT COSTS	**639 000**

ANNEX III

NUMBERS OF BENEFICIARIES, COMMAND AREA, ACTIVITIES AND WORKDAYS PROPOSED

	Annually from 2000 to 2002	Total
Number of beneficiaries	44 000	132 000
Number of workers or households	8 800	8 800
Target Command Area (ha)	5 280	15 840

Activity		Unit	Required workdays/ unit	No. of units	Workdays per year	No. of units	Workdays
1.	Rehabilitation of minor irrigation schemes	no. of schemes	6 500	220	1 430 000	660	4 2
2.	Improvement of agricultural roads	km	1 100	110	121 000	330	363 0
3.	Construction of multi-purpose buildings	no.	800	55	44 000	165	132 0
4.	Establishment of other field crop demonstration plots	no.	40	220	8 800	660	26 4
5.	Miscellaneous (various community infrastructure works)	not specified			88 600		265 8
6.	Training of farmers and farmer leaders	no. of schemes	220	220	48 400	660	145 2
7.	Training of institutional organizers	persons	360	160	57 600	480	172 8
Total					**1 798 400**		**5 3**

ANNEX IV

TANK SELECTION CRITERIA

Step 1: Selection of districts as per Vulnerability Analysis and Mapping

Step 2: Technical Selection Criteria

The following technical tank selection criteria, recommended by IIMI, will be adopted under the expansion phase of project 4521.00. The criteria are based on three indicators:

- *Maha* season Cropping Intensity (CI)—average extend cultivated over five-year period/command area;
- Ratio of tank Catchment Area (CAA) to Water Spread Area (WA);
- Ratio of Command Area (COA) to WA;

Based on the above indicators, the rehabilitation of any tank should be considered under one of the four categories:

- ***Category 1***—Tanks that have a CI near to 1 or more and have CAA/WA ratio less than 7.5. No improvements other than essential urgent repairs required unless water supply can be increased from other sources to increase command area and thereby decrease CI.
- ***Category 2***—Tanks that have a C I between .85 and 1 and have hydrological potential for expanding the command area (i.e. CAA/WA should be more than 7.5). If the COA/WA ratio too is less than 1 they have excess capacity to increase the existing CI. Such tanks are considered for capacity improvement and technical and managerial improvements to expand the command area.
- ***Category 3***—Tanks that have a CI greater than 0.6 but less than 0.85 and have adequate hydrological potential and tank capacity to increase the CI (i.e. a CAA/WA greater than 7.5 and COA/WA less than 1). Such tanks should be considered for managerial and technical improvements.
- ***Category 4***—Tanks that have a CI much less than 0.6 and have inadequate hydraulic potential (i.e. CAA/WA less than 7.5). Such tanks should be considered for groundwater development and augmentation of surface inflow to the tanks through supply canal.

Step 3: Socio-economic Selection Criteria:

- The command area of the scheme should be more than 4 ha. unless part of a cascade system;
- Average landholdings under the tank should be less than 0.5 ha;
- Eligible tanks should have an expected benefit / cost ratio of 1.5;
- 70 percent of the labour requirement should be provided by farmer-owner or tenant farmers;

- Eligible farmers should be members of a registered farmers' organization;
- Farmers' organization should agree to take full responsibility for the operation and maintenance of the scheme according to a jointly prepared agreement between farmers' organizations, DAS and the Department of Agriculture and signed by the farmers' organizations and DAS;
- Farmers' organizations should have at least 30 percent female membership;
- Farmers' organizations should ensure that at least two women are included in their executive committees.