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STATE OF ERITREA

EASTERN LOWLANDS WADI DEVELOPMENT PROJECT

COMPLETION EVALUATION

EXECUTIVE SUMMARY AND AGREEMENT AT COMPLETION POINT

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ABBREVIATIONS AND ACRONYMS

BSF	Belgian Survival Fund
CAD	Command Area Development
CAHW	Community Animal Health Workers (or paravet)
ELWDP	Eastern Lowlands Wadi Development Project
IDA	International Development Association (World Bank Group)
IMT	Irrigation Management Transfer
MOA	Ministry of Agriculture
MOLG	Ministry of Local Government
SAR	Staff Appraisal Report
WRD	Water Resources Department

**STATE OF ERITREA
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COMPLETION EVALUATION**

EXECUTIVE SUMMARY

I. INTRODUCTION

1. The mission was mounted to assess the performance and impact of the Eastern Lowlands Wadi Development Project (ELWDP). The evaluation followed the guidelines and criteria of the IFAD Methodological Framework for Project Evaluation, with its emphasis on: **rural poverty impact** at the household and community level, the **performance of the project** and the **performance of partners** in implementation and its principal concern with the four key measures of: **relevance** of objectives, **effectiveness** of their achievement, **efficiency** in use of funds and resources and **sustainability** of outcomes and impact.

2. The mission started in Rome, where briefings were given at IFAD headquarters by the Director of the Eastern and Southern Africa Division, a Senior Evaluation Officer, the Country Programme Manager as well as the Belgian Survival Fund (BSF) Programme Manager and Assistant Programme Manager. The mission then left for Asmara, where a discussion was organized under the chairmanship of the acting Minister for Agriculture. Several other interviews were held in Asmara, including the Ministry of Agriculture (MOA) (the Project Coordinator and Procurement and Accounting Officers), representatives of the World Bank, the United Nations Children's Fund (UNICEF), the Ministry of Local Government (MOLG), the Water Resources Department (WRD), *Cooperazione Italiana*, the University of Asmara (specifically the team responsible for the Socio-Economic Baseline Study) and several non-governmental organizations (NGOs) dealing with water supply and food aid.

3. The evaluation was undertaken in the absence of consolidated baseline or impact data. The evaluation therefore relied relatively heavily on first-hand fact-finding in the field, which was triangulated by source and by method. Triangulation by source included informal interviews with the staff of the MOA field unit, local administration, the school principal, the Mensheeb health clinic and the Eritrean Relief and Refugee Commission. Project reports and data compilations made available to the mission by those interviewed were also studied. Triangulation by method included participatory learning and action techniques, in particular joint transect walks, focus group interviews and a stakeholders' workshop.

4. The preliminary findings of the evaluation were presented and discussed in a debriefing workshop in Asmara, immediately after the field work.

II. MAIN DESIGN FEATURES

5. **Project rationale and strategy.** The ELWDP started in 1995 with the aim of improving spate irrigation-based agricultural systems to enable a major expansion of smallholder production of basic staples and of strengthening the capacity of the MOA to plan and implement similar activities.¹ This was undertaken in the context of addressing the lack of food security in the area. The development of

¹ In spate irrigation, episodic floods are diverted from river beds to irrigate agricultural land prior to sowing. It is a precarious form of water management as diversion structures may not stand up to the floods and sediment deposition can be substantial.

spate irrigation was and continues to be seen as the main avenue to increasing crop production in Eritrea.

6. Although spate irrigation was the main focus of the project, several other components were included: agriculture and livestock development, provision of drinking water, project management, and improvement of the access road. Total project costs were USD 20.1 million, of which IFAD provided a loan of USD 12.7 million and the BSF, a grant of USD 5.3 million. USD 1.3 million was to be contributed by the Government of Eritrea and USD 835 000 by beneficiaries. This budget was allocated as follows: spate irrigation development (66%), agriculture and livestock development (12%), road development (10%), domestic drinking water supplies development (7%), and project coordination (5%). The BSF contribution was made available in two different grants. The first grant was earmarked for domestic water supply, whereas the second grant was dedicated to the road and agriculture and livestock development components.

7. **Project area and target group.** The ELWDP was planned to cover two well-established agricultural areas in the Eastern Lowlands – Sheeb, with a population of 22 500 and a command area of 3 650 hectares (ha), and Wadi Labka, with a population of 13 500 and a command area of 2 400 ha. The livelihood system in these areas is agro-pastoralist and semi-nomadic. The project's primary target group comprised the land users in the command area; the secondary target group comprised the general population of the area who would benefit from an increased level of services, additional employment opportunities and increased food security.

8. **Implementation partners and arrangements.** For all project components, except the domestic drinking water supplies and the road component, project coordination was to rest with the MOA. The road component was to be implemented by the Ministry of Communication and coordinated by the MOA. The domestic drinking water supplies component, funded under the separate BSF grant, was to be implemented by UNICEF 'in collaboration' with the Ministry of Energy, Mines and Water Resources, in particular the WRD. A separate agreement to this effect was signed between UNICEF and IFAD.

9. The project was due to be completed in December 2000, but because of the Eritrean-Ethiopian War and the time required for local institutional development, the ELWDP closure date was extended first to December 2002 and then to December 2004. The International Development Association (IDA) supervised the project with the exception of the domestic drinking water supplies component, which was implemented and supervised by UNICEF. A Project Steering Committee (PSC) was to bring together the heads of all participating departments of the MOA under the chairmanship of the Director, Planning and Programmes Department. The provincial administrators and representatives of MOA would also be members. Day-to-day management would be in the hands of a designated programme manager, who would be assisted by a socio-economist and an accounts clerk. In Sheeb, where there were hardly any permanent facilities at the start of the ELWDP, an on-site project office was to be built.

10. **Major changes in policy and institutions during implementation.** Several important changes in the institutional arrangements were undertaken, mostly reflecting a much greater use of private sector services than originally anticipated; this was to a large extent a response to capacity constraints within the implementing government agencies.

11. To improve local coordination a local project steering committee (LPSC) was formed in 2001. Apart from the project coordinator and the local project staff, this committee consists of representatives of the zonal and sub-zonal administration of the MOA, and representatives of the village administrations.

12. From 2002 onwards, systematic preparations have been made for the Sheeb Farmers' Association. Its structure and rules, described in the draft Constitution, are based on extensive farmer

participation. Although large informal farmer organizations exist in spate systems in various countries, the Sheeb Farmers' Association will be the first of its kind to run an entire modernized system.

13. On the drinking water front, there were several changes in the mandate between 1996 and 1998. Implementation activities were removed from the WRD and were supposed to be placed with a new parastatal, the Eritrean Well Drilling Company. Subsequently, the role of the MOLG expanded; it was made responsible for supervising the works, as it was finally to own the infrastructure.

14. **Design changes during implementation.** Most changes were formalized after the project restarted in 2000, following the end of open hostilities between Eritrea and Ethiopia. The main changes were the cancellation of the spate diversion component for Wadi Labka and the removal of the road component from the ELWDP budget. Two new sub-components were added: the command area development sub-component and the irrigation management transfer sub-component.

III. SUMMARY OF IMPLEMENTATION RESULTS

15. **Spate irrigation development component.** In physical terms, the project objective of constructing civil works at Wadi Laba, Mai Ule and Wadi Labka, serving an estimated area of 4 670 ha, was not fully achieved as only the civil works at Wadi Laba and Mai Ule – an area of 3 650 ha – were constructed. Major changes to the original design and the fact that the Wadi Laba and Mai Ule works were tendered under international competitive bidding instead of force account inflated costs, and in the end, the Wadi Labka design was prepared but not implemented due to budget constraints. The civil works were completed in 2002. In August of that year a massive flood occurred in both wadis, causing major damage, and a crash emergency repair programme was undertaken.

16. **Command area development sub-component.** After the headworks for Wadi Labka were cancelled, some of the financial resources freed were routed to the command area works. So far three structures have been completed using this formula and 11 more are planned for the coming season in seven locations. The command area development programme had to overcome considerable disillusionment among the farmers because of the 2002 flood damage. Prior to agreement and construction in the command area development programme there is now extensive discussion and consultation, through the *ternafi*. This process was uniformly appreciated among the farmers. An innovative division structure was designed for Sheeb Kateen, which is a good example of cross-fertilization of indigenous knowledge and modern technology.

17. **Irrigation management transfer (IMT) sub-component.** In spite of the recognized need for farmer management in the Staff Appraisal Report (SAR), no specific plan for strengthening farmer organization in the ELWDP was included in project design. It was only in 2002 that IMT took off, when inputs by an international consultant and the local facilitator appointed in early 2003 put this component on track. A start was made with the development of the apex Sheeb Farmers' Association, which took over system management. This farmers' association is being grafted onto the traditional organization for spate management. While much ground has been covered, developing capacities to manage the structures in such areas as book-keeping, work planning and system operation may still be a time-consuming process.

18. **Agriculture and livestock development component** was by and large implemented as planned and, despite its low profile, has a number of positive achievements to its credit. Under the adaptive research programme, two new sorghum varieties were released. Several farmers took advantage of the training programmes provided by the extension department and trained farmers passed their acquired knowledge on to others. The new 'contact farmer' approach, though not yet fully implemented, opens up the possibility of closer contact between researchers and extension workers, and collaborative experimentation on local priorities, the effects of which remain to be seen.

The services of the community animal health workers trained under ELWDP have become very popular. They have achieved wide coverage in terms of vaccinations and have brought animal health control to the farmer's doorstep. It is unfortunate that the distribution of oxen on credit did not continue, because the impact of livestock ownership on farm productivity is very significant.

19. **Domestic drinking water supplies component.** Feasibility studies, several changes in project design and UNICEF's erroneous assumption that total procurement costs would be low and would leave enough of a budget balance for the supplies for the Mensheeb system led to near budget exhaustion in 2000. Materials were stored in the market building of Mensheeb, and still remain there. Apart from the feasibility study and the procurement, UNICEF/WRD had also fielded two community organizers who had to break the ground for community management and create awareness on clean drinking water and appropriate sanitation. In the absence of effective implementation these efforts turned out to be premature. *Cooperazione Italiana* agreed to take over the component. The Mensheeb drinking water supply system however could not be built when it turned out that the source in the Wadi Laba gorge was not perennial.

20. **Road development component.** Very early on in the project it was discovered that the financial outlay was a gross underestimation. Instead, the Government financed and implemented a higher grade road. The BSF grant for this component was reallocated to complete the civil works in the spate irrigation development component.

IV. PERFORMANCE OF THE PROJECT

21. **Relevance of objectives.** The objectives of the ELWDP are in line with the country strategic opportunities paper (COSOP), and remain relevant today. Spate irrigation development is still seen as one of the main avenues to increasing crop production in Eritrea, and this, given the scale of imported food aid, is particularly important. The objective of capacity-building also remains equally relevant, since the Government continues to have plans to expand the area under spate irrigation.

22. **Effectiveness.** The ELWDP constructed only one out of two designated spate irrigation systems. The domestic drinking water supplies component did not get off the ground. The link road was constructed – but largely funded from outside the ELWDP. The agriculture and livestock component was by and large implemented as envisaged.

23. The extent to which ELWDP was effective in expanding smallholder production of basic staples is difficult to measure. Variability in crop production is inherent to spate irrigation, because of the different flood patterns. Insofar as can be assessed after two years of operation and in the absence of baseline data, food crop production has not yet increased significantly. In Wadi Laba, 2003-2004 was a bumper year, but universally farmers ascribed this to the good floods and not to the new ability to divert them. Farmers identified the reduced maintenance burden (previously in peril because of the disappearance of acacia trees from the vicinity) as the main benefit of the spate irrigation development component. Project perception in Mai Ule is still negative, as the 2003-2004 season failed after the breaching bund broke twice.

24. The effectiveness of the other ELWDP activities in increasing crop production is more difficult to establish, as it is difficult to attribute change to the concerned project components. The upgraded extension services and new sorghum varieties have been in place only a short time, and it is too early to establish adoption rates.

25. Capacity-building of the MOA was the second objective of the project. This never received systematic attention, and during design and construction opportunities were missed in knowledge transfer and in the building up of skills. A major constraint was the difficulty in the availability of MOA staff because of mobilization.

26. **Efficiency.** The route taken under ELWDP in spate irrigation development was comparatively costly. Given the lower reliability of irrigation in Mai Ule, this system no longer met the criteria of reasonable economic feasibility. The same can be said for the domestic drinking water supplies component, which had high investment costs per capita as compared to world average costs for similar rural water supply interventions. Unfortunately, the draught animal supply component – in spite of its low cost and potentially high cost-efficiency – was not continued.

V. IMPACT ON RURAL POVERTY

27. **Impact on physical and financial assets.** In comparison with the traditional system of spate irrigation, the new diversion structures allow better control of water within the command area. The impact of this improved control on land productivity varies across the different parts of the command area. Some are better off than before, others worse, mainly because the Mai Ule headworks do not function according to plan.

28. The productivity of livestock has increased due to the Community Animal Health Worker (CAHW) or ‘paravet’ programme, which is effective in improving the health of livestock, and more remote villages now have access to basic animal health services. The impact on livestock productivity of the CAHW programme is however unquantifiable, as the drought of the last three years has offset livestock productivity considerably. The project has had no impact on absolute livestock numbers because the oxen distribution programme was discontinued. The importance of these draught animals is significant, because field bunding and ploughing greatly facilitate soil moisture conservation and can increase crop production by at least 30%. Overall, the impact of the project on physical and financial assets is ranked as modest to substantial (2-3).

29. **Impact on human assets.** The most significant impact on human assets concerns the increase in agricultural knowledge as a result of the agriculture and livestock development programme. Here, the extension programme has fulfilled a definite need. The impact on human assets of the new main road – in the end not funded through the ELWDP – and the local dirt roads (built to facilitate construction of the spate works) has been considerable inasmuch as a positive general trend in school enrolment has been noted. Furthermore, travel time to major cities has been reduced, and farmers have improved access to clinics, boarding schools, markets to buy and sell products and financial institutions in the cities. The project’s contribution to increases in human assets is rated between modest and substantial (2-3).

30. **Impact on social capital and empowerment.** In the project area, there is considerable social capital in the shape of a well-structured informal farmers’ organization that is now being formalized. However, further training is needed for farmers to reach the level of social capital and empowerment needed to administer the project (for example to collect fees, contract services, pay workers, and pay operation and maintenance costs), enforce water irrigation rights, and manage the project headworks and command area structures. Given the gap that remains between what is possible and desirable from a development viewpoint in terms of community self-reliance and involvement and what has been attained up to now, project impact on social capital and empowerment is ranked as modest (2).

31. **Impact on food security.** Although it is still in the early days, any impact (positive or negative) on food security from the spate diversion so far seems modest. There is no indication that a **major** expansion of smallholder production of basic staples has occurred yet. According to the medical staff in the Mensheeb clinic, dietary habits have not improved in the past five years. However, some of the activities in the extension programme – such as the introduction of improved sorghum varieties to 118 farmers this year – hold promise for the future expansion of crop production, if the increased productivity of the new sorghum varieties experienced under trials can be replicated in farmers’ fields and if the varieties are broadly adopted. In addition, diversification into high-value commercial crops

such as vegetables may hold potential. For the time being, project impact on food security is therefore ranked as negligible (1), but potential for future improvement is present.

32. **Impact on the environment and communal resource base.** The main impact on the environment relates to the project having reversed the decrease of tree cover in the area. The construction of the permanent spate headworks has reduced the amount of trees used for building traditional diversion structures. Another impact mentioned by farmers is that they believe that the nutrient requirements of their crops are no longer sufficiently satisfied by the floods due to the loss of sediment and organic nutrients caught in the gravel trap. This issue should be monitored and discussed with farmers. Regrettably, the project has not had any impact on improving the quality of drinking water. The current high nitrate content is harmful to young children and can lead to cyanosis. The contribution of the project to improvement of the environment and communal resource base is ranked as modest to substantial (2-3).

33. **Impact on institutions, policies and the regulatory framework.** Preparations have been made for the Sheeb Farmers' Association and its structure and rules, described in the draft Constitution (in particular the water charge) and have been discussed extensively. Once in place the Association may expand its activities to input supply and water distribution in the command area. It is recognized that future impact may well earn a higher rating, as these processes, while late in being launched, are well structured and local ownership is high. Impact on the regulatory frameworks was not an objective of the project and cannot be assessed. The project was meant to be a pilot and as such holds the potential for influencing spate policy dialogue in the future. The impact of the project on this domain as of now is classified as modest (2).

34. **Impact on gender.** No gender strategy was included in project design and opportunities to increase project impact and balance gender relations have been missed. In spite of widespread illiteracy, women are avid for training in home economics and handicrafts and were generally satisfied with the training received on these issues. Although women farmers carry out a significant part of agricultural activities, only one special training session for women was arranged by the agricultural extension services, and this led to many requests for more. The domestic drinking water supplies component, the one component that could have made a significant difference to women, did not get off the ground. Project impact on gender equality and women's empowerment is therefore considered modest (2).

35. **Sustainability.** Before the project, the availability of trees for traditional diversion structures had become precarious and in bad years the practice of selling draught animals and other livestock was a common coping strategy that in turn reduced the capacity to restore the traditional diversion structures. By constructing permanent diversion structures, this vulnerability has been reduced significantly. The question remains however whether the capacity of the communities, particularly the Sheeb Farmers' Association, to maintain the diversion structures is sufficient. Substantial social capital seems to be in place, but further training is needed for farmers to administer the project on their own. Overall, the sustainability of the project is classified as substantial (3).

36. **Innovation and replicability/scaling up.** At this point in time, it may be too early to judge whether the engineering works are likely to be replicated on a large scale. In general, the evaluation recognizes the potential for spate irrigation in Eritrea as an appropriate strategy for water resource development. A major lesson from the ELWDP is that attention should also be given to low-cost approaches, 'doable' maintenance and to linking investment with the likelihood of irrigation and realistic impact. Not every approach is suitable everywhere, but there is a large number of measures (including the promotion of new crops, livestock support, soil bunding) that can increase the productivity of spate irrigation in Eritrea.

37. Several elements of the ELWDP classify as innovations worthy of replication, both in the country and elsewhere. These include in particular, farmer/government interaction through the local

steering committee, management by farmers of a spate system of this size, the paravet programme and some of the elements of the command area works. The MOA has already capitalized on this and is organizing farmer-to-farmer visits, taking farmers from new spate areas in the Western Lowlands to Sheeb. The rating for innovation and potential scope for replication of some project approaches and activities is substantial (3).

38. **Other poverty impacts.** The investment in the ELWDP and the construction of the road created job opportunities in construction and in the local service sector. Other activities started under the project have also given rise to employment opportunities (for example the paravets and some of the locally trained maintenance staff). The rating for project impact on job opportunities is classified as substantial (3).

39. **Overall impact assessment.** The impact of the ELWDP on poverty reduction is mixed, with both positive and negative elements. The current infrastructure has relieved the threat of the system collapsing through non-availability of suitable brushwood. The current design however depends on breaching bunds, which as yet do not function well and may cause either loss of flood water or the release of flood surges. Also, land productivity varies across the different parts of the command area, with some better off than before, and others worse. The activities in the agricultural programme have had positive results in terms of livestock health (a critical household asset) and farming practices. However, considerable impact could have been achieved with the oxen distribution programme, which was discontinued. No impact was made on improving the quality of drinking water and only very limited, on gender. The potential for impact on social capital and empowerment seems promising with the development of the Farmers' Association, but continued support will be needed.

40. The impact of spate improvement on crop production or food security is as yet not visible. It must be emphasized that the impact assessment is based on only two years of full operation and that the potential for impact on crop production in the future may be higher than currently appears to be the case. The new improved sorghum varieties have potential for production increases. Also, diversification into high-value commercial crops such as vegetables and cotton may hold potential. Future impact will however depend on the successful implementation of the activities recommended for the follow-on phase of the project. The overall impact of the project is thus ranked as modest (2) at present, but with the potential to become substantial.

VI. PERFORMANCE OF PARTNERS

41. **Performance of IFAD.** IFAD must be commended for its initiative to place greater emphasis on the IMT sub-component and the agriculture and livestock development component after 2001 by fielding consultants from its trust funds to formulate programmes in this area. However, IFAD's performance is weak in three areas. The first is the availability of basic financial data and the lack of data on project impact. This is a shortcoming for which all three partners share responsibility – IFAD, the MOA and the IDA, even though formally this is the task of the recipient organization. The second area of weakness is the problematic relationship with UNICEF. The Memorandum of Understanding with UNICEF was rather loose, only obliging UNICEF to carry out the agreed activities with due diligence and efficiency and without provision for supervision by IFAD. IFAD's attempts to guide UNICEF had no effect. This problem concerns inter-agency relations and not the individual performance of operational staff. The third area relates to the overly optimistic assumptions made in project design on government capacity for implementation and on likely project impact. The overall rating is (2-3).

42. **Performance of the cooperating institution.** As far as can be judged, procurement in the components supervised by the IDA was handled smoothly and the professional composition of supervision teams has been adequate. IDA supervision must be commended for pushing, at an early

stage, the issue of engaging an international engineering firm to prepare the designs. The reorientation of the project, after project restart in 2000, which put an emphasis on encouraging farmers' involvement in the command area works, creating an effective farmers' association, and regaining trust in the aftermath of the 2002 flood can also in part be attributed to IDA supervision. Supervision reports were timely and of high quality and follow-up on previous recommendations satisfactory. The overall rating is therefore (3).

43. Performance of the Government and its agencies (including project management). Throughout the project, the Government was unable to make sufficient staff available. Even so, the components agreed upon after the budget reallocations have all been by and large implemented, mostly in the period 2000-2004. Given the limited human resources, this is a considerable achievement. What never took off, however, was the monitoring of project impact. Similarly, financial administration remained problematic until very recently. Monitoring in the drinking water sector is equally weak. First WRD, and later MOLG, suffered from the absence of well-established systems to implement this component. These assessments must be seen within the overall challenging context in which the project unfolded and both national and local management must be commended for overcoming a series of exogenous strains. The overall rating is therefore (2-3).

44. Performance of non-governmental and community-based organizations. UNICEF had the responsibility for the failed domestic drinking water supplies component. The WRD, and later the MOLG, similarly were responsible for management and implementation. A number of things went wrong pertaining to weaknesses in feasibility reports and designs, hydrological investigations and implementation. UNICEF's performance in supervision was very weak, as is clear from the frequently changing design concepts, lack of quality supervision of fieldwork, absence of standard practices for hydro-geological investigations, and the many inaccuracies in the commissioned designs. It is understood that improvement is imminent, after much delay. The overall rating is therefore (1).

45. Performance of cofinanciers. Under its Joint Programme, the BSF has transferred responsibility for spending and administering its two grants (BF-13 and BF-14) to IFAD. By and large, the role of the BSF appears to have come into play when there were requests for extensions or reallocations. In the early years, BSF fielded a person to two of the first supervision missions, but later its participation in these missions was limited. Engagement was by staff posted to various new delegations in the field or seconded to IFAD under the Joint Programme. This made continuity and follow-up more difficult. The BSF fielded an observer to accompany the evaluation mission; this was highly appreciated, as the contact was constructive and provided much valued insights. The overall rating is (3).

VII. OVERALL ASSESSMENTS AND CONCLUSIONS

46. The overall performance of the ELWDP – when assessed against the objectives in the SAR – is modest. The overall assessment of impact on rural poverty reduction is also rated as modest. However, it must be emphasized that the impact assessment is based on only two years of full operation and that the potential for future impact by the project may be higher.

47. Explanation for the modest ranking of overall project performance is found in the fact that several of the components initially planned could not be taken up or completed, such as the Wadi Labka spate works, the road development component and the domestic drinking water supplies component. This was due to inaccurate assumptions at project design concerning government implementation capacity, optimistic estimates of project impact, budget underestimates in the infrastructure components and limited contingencies.

48. The problem of budget underestimates was worsened because there were limited contingencies within the ELWDP budget. The consequent strategy was to cover shortfalls in one component by reducing the range of activities in another. This was problematic because, in the end, financial commitments rather than objective priorities determined the course of events. Finishing the costly headworks became the highest priority, because they could not be left mid-air. Instead the agriculture and livestock development component was used as small change and put on hold, even though its potential effect on agricultural productivity was high.

49. Reasons for the modest ranking are also found in implementation difficulties including inadequate supervision arrangements within the domestic drinking water supplies component, insufficient attention to farmers' participation at the early stages of the project, and inadequate staffing by the MOA. It is important to note that the inadequacy relates to numbers; the quality and commitment of staff is high, which explains the considerable achievements made in the last four years.

50. Despite the shortcomings, it should be remembered that for a large part of project duration the ELWDP has been implemented under the unusual circumstances of post-conflict, conflict and, once again, post-conflict. This has had a number of consequences for the project, for instance, the lack of any track record on which to build, the difficulty in adequately assessing implementing capability initially, changes in project staff, demobilization of consultants, cancellation of tenders and a shortage of skilled junior staff due to mobilization (still ongoing).

VIII. RECOMMENDATIONS AND INSIGHTS

51. The mission concludes that even though the infrastructural investments are largely completed, the ELWDP is still unfinished; the project would lend itself to further analysis and documentation in order to provide lessons for future spate irrigation strategies in Eritrea and elsewhere. Furthermore, as this project is evolving under the constraints of conflict and post-conflict, it also provides important insights in this respect.

A. Recommendations

52. **Extend the project's closing date to mid-2006.** The objective of the extension will be to ensure the safe completion and sustainability of the project. The extension should be high in terms of management and low in terms of disbursement. The breaching bunds need to be examined; adequate time and resources are required to realize the full potential of the irrigation management transfer sub-component, the command area development sub-component and the extension and training sub-components, thereby giving the entire project more likelihood of sustainability.

53. **Field an expert in financial analysis.** There is no doubt that at the audit level, finances have been properly managed and expenditures can be justified. However, the current input-based financial system could be improved in order to allow for strategic use of the project's financial resources. Knowledge in financial project administration should be transferred to the project staff and systematic support by the donor should be provided, if needed.

54. **Extend support to the Sheeb Farmers' Association.** The well-structured participatory processes should be built upon and support should be provided to the Sheeb Farmers' Association to extend training to farmers so they can manage the operation of the headworks. Capacity-building should include management of the earth-moving equipment, training in budget administration (including fee collection), improvements in command area development and changes in the system of water distribution.

55. **Resolve operational problems in the spate system.** The MOA, the Sheeb Farmers' Association and external expertise should jointly undertake an analysis of whether current project

design can accommodate the flood peaks – especially in Mai Ule. The mission concludes that the breaching bunds are the weak point in the current design and represent a substantial liability and risk. This analysis should extend to a thorough review of the operation of the sediment ponds, as they are currently performing below expectation, filling up very rapidly and possibly intercepting fine silts in the early part of the flood season that otherwise could improve soil fertility.

56. **Discuss improved water distribution as part of the command area development sub-component.** The participatory process followed in the last year has been instrumental in establishing effective communication between farmers and the ELWDP and in identifying innovative designs. MOA field staff and the Sheeb Farmers' Association should review and discuss the water distribution rules applied within the command area. This discussion should also address the supply of water to tail-end/overflow areas, without direct *mishgas* (flood channels).

57. **Broaden the scope of the agricultural extension sub-component.** There is a well-established practice of dissemination of extension messages within the communities. To enhance the performance of the contact farmers in particular, there is a need to link them structurally to frontline extension, and more importantly to the back-up provided by the *zoba* (district-level administrative units) and *sub-zoba* subject matter specialists, and to field research. A major training/skills development programme for both research and extension personnel and for improving linkages between research and extension should be considered.

58. Priorities identified by extension agents such as groundwater irrigated horticulture, and forage and feed production (using drought-resistant grasses, fast-growing species and cultivars of fodder plants), as well as diversification into high-value commercial crops such as vegetables, watermelons and chillies may also hold potential. In the training and extension programme, special care is needed to reach and engage women farmers by tailoring training to their specific priorities or by engaging women contact farmers. To prevent the agriculture and livestock development component from becoming a side-show, it would be necessary to resource it adequately with senior capacity to assist the extension agents.

59. **Establish paravet associations.** It is recommended that local paravet associations are supported by the ELWDP and the MOA, possibly arranging the supply of drugs from the MOA animal health clinics and coordinating training needs.

60. **Use stored material from the domestic drinking water supplies component.** This material, procured in 1999/2000, is still unused. Ambiguity remains as to what part of it will be used by the proposed *Cooperazione Italiana*-funded drinking water system in Sheeb. It is recommended that UNICEF and the MOLG update the inventory of stored material and prepare a plan on where to use it, in Sheeb or elsewhere in the country.

61. **Undertake a water quality survey.** The supply of safe drinking water in the area is uncertain as there has not been a water quality survey that covered all wells and known sources. It is recommended that the MOLG/UNICEF commission a comprehensive survey, whose findings should be shared with health workers in the area. Such a survey may also be extended to the salinity and sodicity parameters that affect crop production.

B. Insights

62. **Limit the number of project components when operating in conflict and post-conflict situations.** Such a limitation would allow for a sharper focus, particularly in conflict and post-conflict situations. The spate irrigation development component, being the most capital-intensive one, received most of the project management and supervision time. It is recommended in future projects of this nature that IFAD try to achieve a stronger single focus, taking cognizance of the fact that in a

package combining capital-intensive and low investment measures, the latter may get low priority. In post-conflict situations due attention should be given to components that quickly rectify immediate resource constraints, such as the supply of draught animals or bulldozers.

63. **Initiate monitoring mechanisms at an early stage in the project.** It is recommended that monitoring and activity-based budgeting procedures are put in place at a very early stage of project implementation. By establishing a baseline and following up with simple indicators to be collected regularly, impact can be assessed continuously and feedback can quickly influence decision-making processes. IFAD as a funding agency may take responsibility in this regard rather than assuming that it will be done by a usually overburdened project management unit.

64. **Consider alternative implementation capacity strategies in Eritrea.** Capacity constraints necessitated a reformulation of modalities in the early stages of the project. It is recommended that in future projects, alternative capacity strategies be considered. This could take the form of engaging staff on private sector contracts rather than as employees of the MOA. Another strategy is to engage more actively, where possible, local people on a part-payment basis following the example of the successful paravet programme.

65. **Systematically structure farmer participation from the onset of the project.** Farmer management and farmer participation should be organized in a systematic manner. Farmers formulated their recommendations for future projects as follows: more formal and structured consultation, rethinking of design parameters and an earlier start to the establishment of farmers' associations.

66. **Revisit the approach to spate irrigation development.** It is recommended that in spate irrigation development in Eritrea a broad range of options be considered. Furthermore, improving or supporting spate irrigation should not automatically be equated with the development of civil works, and particularly not with the type of top-range solutions adopted in Wadi Laba and Mai Ule. Moreover, in many locations the headworks may be technically difficult, economically not viable and complicated to manage. In these areas, improvements in command area networks and water distribution, the development of spate systems on smaller tributaries, the use of low-cost technology to strengthen traditional diversions, the introduction of improved draught animals and the development of high-value cropping patterns may all give better value-for-money.

**STATE OF ERITREA
EASTERN LOWLANDS WADI DEVELOPMENT PROJECT
COMPLETION EVALUATION**

AGREEMENT AT COMPLETION POINT²

**(THIS IS A DRAFT VERSION WHICH IS BEING DISCUSSED IN ERITREA IN THE
WEEK OF 4 OCTOBER. ANY CHANGES WILL BE CONVEYED TO THE COMMITTEE
ON 15 OCTOBER)**

I. CORE LEARNING PARTNERSHIP AND THE USERS OF THE EVALUATION

1. The Office of Evaluation (OE) of IFAD conducted a Completion Evaluation of the Eastern Lowlands Wadi Development Project in line with the approach described in 'A Methodological Framework for Project Evaluation' (IFAD 2003). The evaluation mission visited Rome and Eritrea from 24 November to 12 December 2003. The first findings were presented and discussed in a stakeholders' workshop at the end of this visit, whereas prior to that a workshop had been organized with the farmer leaders (*ternafi*) in the project area.
2. The draft evaluation report, including the draft Agreement at Completion Point (ACP) were distributed on 2 August, 2004 and a final evaluation workshop was organized on 5-6 October, 2004 to discuss the overall results and conclusions deriving from the evaluation. OE participated in the final evaluation workshop to ensure a full understanding of the evaluation's findings and recommendations and to facilitate the process that leads to the final ACP.
3. The participants in the final ACP workshop included representatives of: (i) the project implementation agencies, and (ii) donors and multilateral agencies. The Core Learning Partnership (CLP) comprises representatives of the Ministry of Agriculture, in particular the Project Director and the Project Team, representatives of the Ministry of Local Government, representatives of IFAD (Eastern and Southern Africa Division and the Office of Evaluation), the co-financier BSF, The World Bank and UNICEF.
4. The Agreement at Completion Point (ACP) describes the evaluation partners' understanding of the evaluation recommendations and the actions to adopt and implement them.

II. THE MAIN EVALUATION FINDINGS

5. The findings of the Interim Evaluation Mission are set out in the report of August 2004 and the annexes. The objectives and activities of the Eastern Lowlands Wadi Development Project are in line with the policy of the State of Eritrea of promoting spate irrigation and in agreement with the strategic concerns of IFAD as described in the COSOP of 1997.
6. The project was started in 1995. For most of the project period it was implemented under difficult circumstances, in particular the hostilities with Ethiopia that resulted in a de facto suspension of project activities in 1998-1999 and the mobilization, which has made it difficult to operate the project with full staff deployment. The scope of the project originally consisted of the improvement of

² This agreement reflects an understanding among partners to adopt and implement recommendations stemming from the evaluation. The agreement was formulated in consultation with the members of the Core Learning Partnership (CLP), including the Ministry of Agriculture, Ministry of Local Government, UNICEF, The World Bank, BSF, The University of Asmara, local Project Management and local representatives.

spate irrigation in two areas in the Eastern Lowlands – Wadi Labka and Sheeb, improved drinking water supply in these two areas, the improvement of agricultural and livestock services and upgrading the access road to the project area. In the course of the ELWDP the scope of the project had to be reduced. The spate irrigation works in Wadi Labka were dropped, because of budget limitations. The road was improved to a higher standard than foreseen but at the expense of the budget of the State of Eritrea. After the year 2000 considerable progress was made in ELWDP, particularly in the implementation of the spate irrigation works and in the agriculture and livestock component. This was achieved in spite of only having a small project team in place. From the year 2002 onwards farmers' participation was mainstreamed into the project, through the establishment of the Sheeb Farmer Association and by local coordination through the Local Project Steering Committee, in which project management, local government and farmer leaders equally take part.

7. The project was based on ambitious targets with respect to increased agricultural production. These targets – which appear unrealistically high – have so far not been met. The first year of operation of the spate diversion works was dramatic as unusually large floods combined with the late breaking of the breaching bunds caused considerable damage to the command area works. As a result the 2002/3 crop season by and large failed. The damage was commendably repaired in time for the 2003/4 season. In this season unfortunately the breaching bund in Mai Ule broke twice, resulting in low crop yields in this part of the Sheeb system. The Wadi Laba command area witnessed a very good crop, which farmers attribute primarily to the favourable flood season. Farmers are generally appreciative of the works in Wadi Laba, but see the main benefit in the reduced maintenance burden. The construction of brushwood structures was becoming increasingly difficult and probably non sustainable in the long run, due to the shortage of acacia trees.

8. The agricultural and livestock component has been popular with farmers, in particular the agricultural trainings – for which there is a large demand - and the services of the paravets. One important bottleneck in Sheeb remains the availability of draught animals, essential for land preparation activities. Access to oxen holds the key to soil moisture conservation and contributes importantly to increased yields. The program of restocking livestock in the area was in place in the early part of the project, but discontinued in the later stage.

9. The drinking water component did not come off the ground. Preparatory studies and designs were undertaken and material for a drinking water scheme in the main settlement of Men'sheeb was procured. The implementation of this drinking water scheme had to be abandoned, because the source that was identified turned out to be unreliable. The drinking water component was subsequently funded by Cooperazione Italiana. The faith of the drinking water component remained uncertain for a long time, as no nitrate-free source could be found. It is understood however that recently safe drinking water sources have been identified.

III. THE RECOMMENDATIONS

10. The recommendations concern both policy issues and follow-up actions. In several respects the Eastern Lowlands Wadi Development Project was a 'first'. It was the first IFAD/BSF project in Eritrea, identified just after the new country emerged from a long conflict. It was the first significant investment in civil works for spate irrigation in the country. It was also one of the earlier projects in the IFAD-BSF Joint Program. Summarized below are the policy lessons learned and the immediate follow up actions to be taken to ensure the proper and safe completion of ELWDP.

11. The major recommendation of the Evaluation Mission is that there should be an extension of ELWDP activities until mid-2006, given the need to consolidate investments and ensure the successful and safe completion and sustainability of the project. This recommendation is valid provided that lessons learned and the recommendations from the evaluation are applied.

12. The recommendations are arranged according to two principal categories: (i) follow up activities and (ii) strategic directions. Within the category of follow up activities a number of themes are listed: (1) extension until mid-2006; (2) field an expert in financial analysis; (3) support to Sheeb Farmers' Association; (4) resolve operational problems in the spate system; (5) continue agricultural component; (6) sustain paravet program; and (7) finalize drinking water component. Within the category of strategic directions the following themes are listed: (1) operating projects in conflict and post conflict situations; (2) monitoring and management to steer outputs; (3) revisit and broaden the approach to spate irrigation development; (4) systematically engage farmer organizations from the onset of the project; and (5) interagency collaboration.

IV. FOLLOW-UP ACTIVITIES

Theme 1: Extension until Mid-2006

13. An extension of ELWDP activities until mid-2006 is required to ensure the successful and safe completion and sustainability of the project. The current operation of the system – in particular the breaching bunds – entails an unacceptable risk, that should be resolved in the extension period.

14. An extension up to mid-2006 is necessary, because due to the inclement weather in Sheeb project activities only take place during the October-April interval and because many project activities have only started effectively from 2000 onwards. The extension will be low in disbursement but high on management. Supervision arrangements need to adjust to this. Activities in the extension period should be in support of the Sheeb Farmers Association, improving technical operations and strengthen the support to the agricultural component and the paravet program. An extension may also be used to monitor project impact over a longer period and summarize lessons learned and contribute to a spate irrigation development strategy in Eritrea.

Follow up: Ministry of Agriculture, IFAD and BSF agree on extension and prepare a program of activities and budget. IFAD to reassess most appropriate supervision arrangements.

Theme 2: Field an Expert in Financial Analysis

15. Ideally financial management and impact monitoring help to manage, steer and adjust project activities and lead to high effectiveness. There is no doubt that at audit level spendings can be justified in ELWDP. However the current input based financial system and the current monitoring system could be improved to allow for a more strategic use of project financial resources. Knowledge in financial project administration should be transferred to the project staff and systematic support by the donor be provided, if needed.

Follow up: Ministry of Agriculture, IFAD and BSF agree on the fielding of expert in financial analysis.

Theme 3: Support to Sheeb Farmers Association

16. The third follow up action is to build on the now well-structured participatory process and extend support to the Sheeb Farmer Association. The following needs to be achieved: support coaching and training of farmers in the operation of the system, including the management of earth moving equipment, training and coaching in crucial tasks such as the administration of an agreed upon budget, collection of fees, preparing accounts and hiring of staff and a continued discussion and planning in order to bring about improvements in the command area – including changes in the system of water distribution, when needed.

Follow up: Detailed program of support to the Sheeb Farmers Association to be prepared and agreed upon.

Theme 4: Resolve Operational Problems in the Spate System

17. A particular area of weakness in the operation of the current civil works are the breaching bunds. There are questions as to whether the bunds in the current designs can handle the flood peaks – particularly in Mai Ule. The risk is that farmers may want to raise the bunds, which can cause the bunds to breach too late – resulting in a disastrous flood surge. The same can happen if the bunds settle over time, making them more compact and stronger. MOA and Sheeb Farmers Association with the help of external expert support will review the operation of the breaching bunds. It will review the construction of the bunds and consider possibilities of forced breaching by creating cuts in the soil bunds during high floods for instance. In the review the best operation of the sedimentation ponds will be looked at too. Because the scour sluice removes most coarse gravel, the sediment trap now only intercepts fine sediment. This makes the constant removal of material, as foreseen in the operating guidelines, unnecessary and substantial costs could be saved.

Follow up: Technical mission to be fielded to improve on breaching bunds and to work in supporting Sheeb Farmers Association and MOA.

Theme 5: Continue Agricultural Component

18. For a long time the agricultural component was devoted to the development of new sorghum varieties. While this in itself has been useful, it is also important to continue and further develop the recently intensified collaboration between contact farmers, extensionists and researchers, particularly as there is a well-established practice of dissemination of extension messages by communities within communities. A major training/skills development program for both research and extension personnel and improving linkages between research and extension should be considered. In the needs assessment several promising new fields have been identified such as ground water irrigated horticulture (using low cost tube wells) and forage and feed production (drought resistant grasses and fast growing species and cultivars of fodder plants). Diversification into high value commercial crops including for example vegetables, watermelons and chilies may also hold potential. It is agreed to continue the extension program in this direction – making a larger effort to engage female farmers and continue to involve contact farmers.

Follow up: Agricultural component to be extended by MOA and to include the elements described above (new techniques, gender approach and engagement of contact farmers), after proper training, if required with support of IFAD.

Theme 6: Sustain Paravet Program

19. It is also agreed that this paravet/community animal health workers program needs to be continued. To ensure continuity paravet associations will be supported. These associations will provide common services such as arranging the supply of drugs from animal health clinics and will coordinate training requirements.

Follow up: Plan for support to paravets and paravet associations to be prepared by MOA with support of IFAD and included in overall work program

Theme 7: Finalize Drinking Water Component

20. Finally, it is agreed that – in spite of all unsatisfactory achievements in ELWDP in this field – that the drinking water component needs to be completed in an appropriate manner. Funding for the investments will now come from the Cooperazione Italiana/ UNICEF program. In support of this a pragmatic and comprehensive water quality survey can be funded, if still required, from unutilized grant funds for this component. This survey should include an information campaign for health workers and others on the effects of consuming high-nitrate content water. The funds will be used to

map out water quality from all water points in the area, particularly for those communities not having access to safe sources. Another follow up action is that a plan will be made by UNICEF/ MOLG to utilize the still unutilized material for the drinking water component, which may be in Sheeb or elsewhere in the country.

Follow up: UNICEF and MOLG to prepare plan for reutilization and for water quality survey and to implement the drinking water component.

V. RECOMMENDATIONS FOR STRATEGIC DIRECTIONS

Theme 1: Operating Projects in Conflict and Post Conflict Situations

21. ELWDP has been largely implemented in a situation of conflict and post conflict and given these circumstances the actual achievements are commendable. The conflict with Ethiopia has resulted in much loss of time and in discontinuity. It has also caused capacity problems within the implementing organisations, because much staff was under mobilisation for large part of the project period.

22. Because of the associated uncertainties of a post-conflict situation the SAR already advocated a 'simple' approach. Experience of ELWDP reinforces this point. It has not been easy to create synergy between the different project components. One lesson of ELWDP is to limit the number of project components and rely on existing mechanisms to implement project activities – as in case of ELWDP with the road component and the agricultural component. A second lesson is to give due attention to activities that quickly rectify immediate resource constraints – such as the supply of draught animals or bulldozers for earth works. A third lesson is to acknowledge the capacity problems that arise and search for alternatives – such as engaging services of private sector experts or training and involving local expertise (such as the paravets).

Follow up: BSF and IFAD to incorporate these lessons in ongoing policy work on operating in post conflict situations.

Theme 2: Monitoring and Management to Steer Outputs

23. In ELWDP at an early stage, the decision was made to set up the financial administration on the basis of spending categories rather than project outputs and project components. In this sense, the current monitoring system could be improved in order to assess the performance in each component and determine their cost effectiveness more efficiently. In setting up monitoring systems, the preference should be for relatively easy and quick-to-collect parameters – preferably as part of the regular reporting systems, which provide feedback as to whether the different project components are on target in terms of the objectives they were meant to achieve. Examples could be the number of people with access to irrigation, the area under cultivation (as assessed from transect walks), the real costs of the different investments and the general perception of the project. It is strongly suggested that setting up such financial systems and monitoring and feedback mechanisms be the joint responsibility of the implementing government and the project financier, not of the implementing government only. The project financier by virtue of its broader experience in this field should, if required, take the lead in investing in these systems and in the human resource development that goes with it.

Follow up: IFAD to explore possibility of streamlining support in monitoring and financial management across its projects, including capacity building. Ministry of Agriculture to make financial staff of sufficient calibre available.

Theme 3: Revisit and Broaden the Approach to Spate Irrigation Development

24. The civil engineering approach in ELWDP followed what during the identification of the project was considered to be good practice in spate irrigation development. Yet the structures came at relatively high investment costs per hectare and their impact in terms of increased crop production over the traditional system is as yet not established. A main benefit, however, identified during the evaluation is the reduced maintenance burden, which because of the dependence on ever more scarce acacia brushwood under the traditional system was in peril and could have endangered the sustainability of spate irrigation in the area. The engineering works under ELWDP have brought their own risks however. In particular, if the breaching bunds break too early, they will make it difficult to irrigate or alternatively, when they break too late, they can possibly cause a disastrous flood surge.

25. As spate irrigation is still considered a main area for improved food security in Eritrea, a broad range of approaches and options need to be considered in improving spate irrigation, in line with local terrain and resources. Cost effective opportunities for spate irrigation improvement in Eritrea are: the provision of bulldozers on paid or even commercial rates; the improvement in command areas networks and water distribution strategies; the development of relatively cheaper spate systems on smaller rivers; the use of low-cost technology to strengthen traditional diversions; the introduction of improved draught animals, and the development of high value cropping patterns.

Follow up: Project partners – including World Bank – to organize a workshop and prepare a lessons learned document on spate irrigation development and ensure its proper dissemination.

Theme 4: Systematically Engage Farmer Organizations from the Onset of the Project

26. In ELWDP some farmer discussion took place during the design stage, but during the construction and post construction stage there was a loss of confidence, prompted further by the disastrous flood events in 2002 as well. One lesson for farmer participation to be meaningful is to give it a central place from the beginning in the implementation of projects such as ELWDP. This should be done in a systematic manner through establishing a farmers association at an early stage (with due respect for the traditional organisation in this field) and through formal and structured consultation, leading to mutual agreements on designs and responsibilities.

Follow up: Ministry of Agriculture and IFAD to integrate this lesson in ongoing programmes, if not done so already.

Theme 5: Interagency Collaboration

27. The one component in ELWDP that did not yield result – in spite of the high need for it - was the drinking water component. This component was implemented by UNICEF, which was given full responsibility for it. This caused a conflict of functions, however – design, implementation, supervision. Within the project there was moreover hardly the possibility to correct the cause of events, when the drinking water component started to fail. The lesson learned here is to separate implementation and supervision functions. Agreements between agencies should clearly reflect this division of tasks and include provisions to take corrective action, if things do not evolve as planned.

Follow up: IFAD and BSF to review their collaborative arrangements with UNICEF – and reassess the underlying MoU's.

**VI. FINDINGS AND RECOMMENDATIONS ORIGINALLY FORMULATED BY OE BUT
FOUND NON-APPLICABLE BY SOME PARTNERS**

//this depends on the outcome of the ACP discussion//