



Enabling poor rural people
to overcome poverty

PROJECT EVALUATION



Democratic Peoples' Republic of Korea

Uplands Food Security Project

Interim Evaluation

June 2009



**Document of the
International Fund for Agricultural Development**

Democratic Peoples' Republic of Korea

Uplands Food Security Project

Interim Evaluation

**June 2009
Report No. 2026-KP**

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Democratic Peoples' Republic of Korea

**Uplands Food Security Project
(UFSP) – Loan No. 553-KP**

Interim Evaluation

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Currency and Exchange Rates

Currency Unit	North Korean Won (KPW)
Exchange rate at the time of Appraisal (2000)	2.16 KPW = 1 USD
Exchange rate at the time of the Interim Evaluation (2008)	150 KPW = 1 USD

Abbreviations and Acronyms

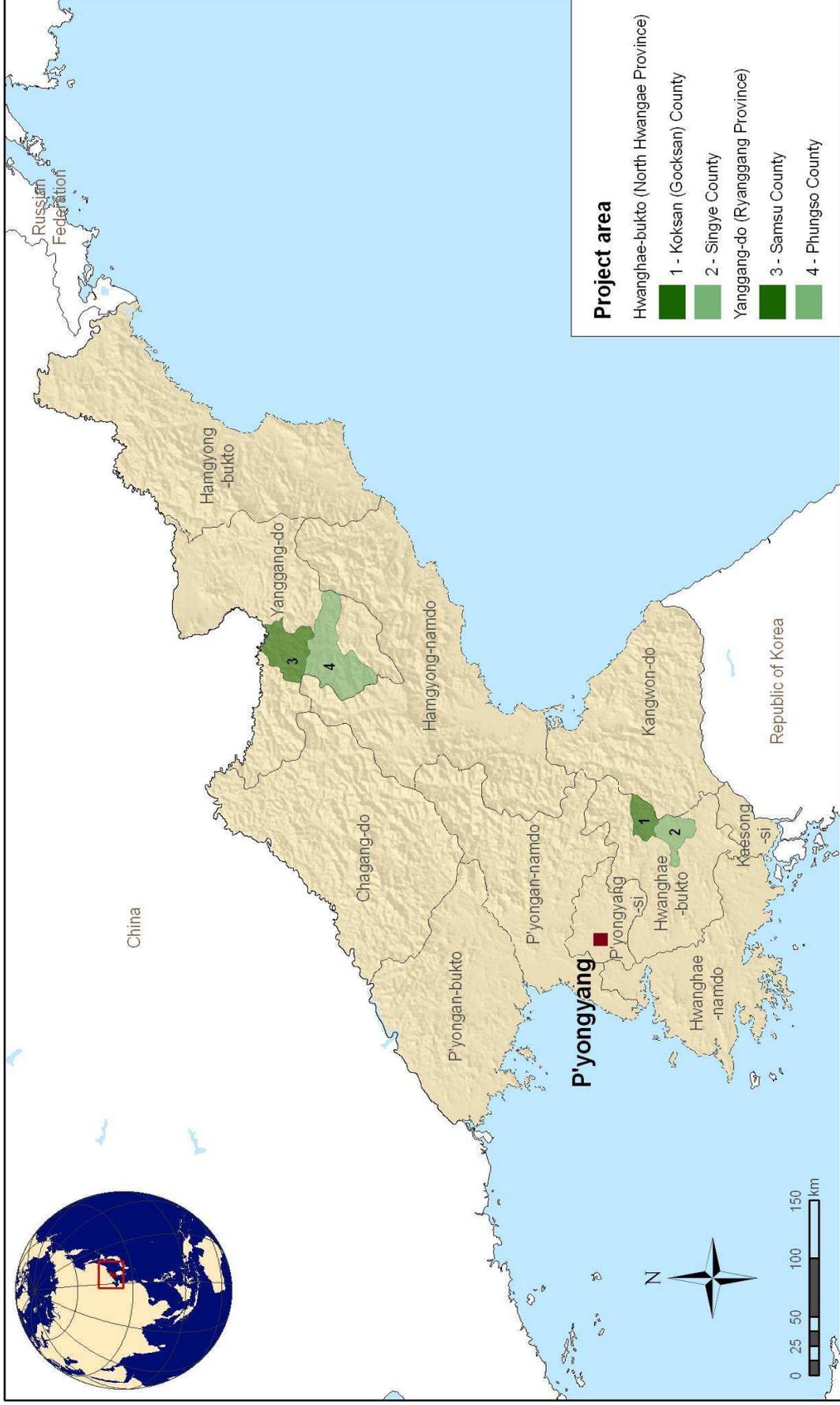
CB	Central Bank
CCFMC	County Cooperative Farm Management Committee
CESVI	Cooperazione e Sviluppo Italiana
CF	Cooperative Farm
CCFMC	Cooperative Farm Management Coordination Committees
CFSAM	Crop and Food Supply Assessment Mission
CI	Cooperating Institution
CLRP	Crop and Livestock Rehabilitation Project
COSOP	Country Strategy and Opportunities Paper
CPM	Country Programme Manager
DPRK	Democratic People's Republic of Korea or North Korea
EU	European Union
EUPS	European Union Programme Support (Government's description of NGOs – for example see GAA below)
FAO	Food and Agriculture Organization of the United Nations
FDRC	Flood Disaster Rehabilitation Committee
FFW	Food for Work
GAA/DW	German Agro Action/ Deutsche Welthungerhilfe/EUPS 4
GDP	Gross Domestic Product
HP	Horse Power
IFAD	International Fund for Agricultural Development
IFI	International Financial Institution
K	Potassium
KPW	North Korean Won
masl	Meters above seal level
M&E	Monitoring and Evaluation
MDG	Millennium Development Goal
MoA	Ministry of Agriculture (formerly the Agriculture Commission)
MoF	Ministry of Finance
MoLEP	Ministry of Lands and Environmental Protection
MT	Metric Ton
MTR	Mid-term Review
N	Nitrogen
NAAS	National Academy of Agricultural Sciences
NACF	National Agricultural Cooperative Federation
NGO	Non-government Organisation
OE	Office of Evaluation
OSC	Operational Strategy and Policy Guidance Committee
P	Phosphorous
PCR	Project Completion Report
PDS	Public Distribution System
PI	Asia and the Pacific Division
PMD	Programme Management Department
PMU	Project Management Unit
PRA	Participatory Rural Appraisal
PREC	Provincial Rural Economy Committee
ROK	Republic of Korea or South Korea
SDC	Swiss Development Cooperation

SDR	Special Drawing Rights
TA	Technical assistance
TRC	Technical Review Committee
UFSP	Uplands Food Security Project
UN	United Nations
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
UNOPS	United Nations Office for Project Services
WFP	World Food Programme

The Democratic People's Republic of Korea

Uplands Food Security Project

Interim evaluation



The designations employed and the presentation of the material in this map do not imply the expression of any opinion whatsoever on the part of IFAD concerning the delimitation of the frontiers or boundaries, or the authorities thereof.

IFAD
Map compiled by IFAD

FOREWORD

The objective of the Uplands Food Security Project in the Democratic People's Republic of Korea (D.P.R. Korea) was to promote balanced, sustainable and replicable cropping systems and environmental management on 46 cooperative farms in upland areas of the country, with a view to improving soil fertility and achieving higher and more secure production levels. This was expected to result in better standards of living for 18,000 low-income households and benefit some 61,000 individuals directly. The project had seven components, including agricultural development, environment preservation, and provision of household and cooperative credit. Total estimated costs at appraisal were US\$41.77 million, including IFAD financing of US\$24.44 million and contributions of US\$5.71 million and US\$4.44 million from the beneficiaries and Government, respectively, as well as US\$ 7.18 million in cofinancing from the Food and Agriculture Organization of the United Nations (FAO), World Food Programme (WFP), United Nations Development Programme (UNDP) and Cooperazione e Sviluppo Italiana (CESVI) – an Italian NGO. As IFAD's cooperating institution, the United Nations Office for Project Services was responsible for loan administration and project supervision.

Overall project impact was considered satisfactory, especially with regard to improvements in household income and assets, social capital and empowerment, agricultural productivity and food security. The evaluation concluded that these achievements were mainly attributable to the cooperative farm (CF) and household credit activities.

The evaluation also concluded that the project was relevant as it addressed the food security and rural poverty constraints prevailing at the time of appraisal, and that it chose to intervene in marginal upland areas using a farming systems approach – very much in line with the recommendations contained in the D.P.R. Korea Country Strategic Opportunities Paper produced in the year 2000. However, design of the main component, sustainable crop production systems, contained serious inconsistencies that may be attributable to poor stakeholder participation, the limited interaction with national and international expertise, and inadequate availability of technical, social and economic data at the time of project design.

The project relied on a wide range of partnerships, particularly with international development agencies present in the country at design. However, these agencies did not adhere to the commitments, largely owing to the lack of formal and binding arrangements between them, IFAD and the Government. Although the lack of FAO and UNDP technical assistance was felt strongly, it was partly compensated for by greater involvement of the National Academy for Agricultural Sciences in the second half of project implementation. Similarly, while food-for-work support from WFP was far below expectations, it was complemented by large, uncompensated labour contributions from project beneficiaries. Project design also underestimated the communication challenges that arose between the project management unit and project partners, including IFAD.

Several of the changes introduced, such as sound crop rotations, potato seed supply, individual livestock-fattening activities on the CFs and fuelwood plantations, have good sustainability potential. However, the continued dependence of CFs on imports of agricultural produce, the uncontrolled cultivation of sloping land originally under forest, and fragility of the resource base of both the CFs and households all limited the sustainability of project impact.

The present evaluation report includes an Agreement at Completion Point summarizing the main findings of the evaluation and setting out the recommendations that were discussed and agreed by the Government of D.P.R. Korea and IFAD, together with proposals as to how and by whom the recommendations should be implemented.



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Uplands Food Security Project (UFSP)

Interim Evaluation

Executive Summary

I. INTRODUCTION

1. **Evaluation objectives, methodology and process.** In the spring of 2008, the Office of Evaluation (OE) of IFAD undertook an Interim Evaluation of the Uplands Food Security Project (UFSP) in the Democratic Peoples' Republic of Korea (DPRK). The main objectives of this evaluation were to (i) assess the performance and impact of the project; and (ii) generate a series of findings and recommendations for future projects and programmes financed by International Fund for Agricultural Development (IFAD) in the country. The evaluation adopted the latest methodology for project evaluations developed by OE, focusing on four areas: (i) performance of the project measured in terms of relevance, efficiency, and effectiveness; (ii) rural poverty reduction impact according to five impact domains; (iii) other performance criteria such as sustainability and innovation, replication and scaling up, and (iv) performance of the partners, including IFAD, the Government of DPRK, United Nations Office for Project Services (UNOPS) and other financial and implementation partners.

2. The mission held talks in Pyongyang with Government partners such as the Ministry of Agriculture (MoA), including the Project Management Unit (PMU), the Ministry of Finance (MoF), the Ministry of Land and Environmental Protection (MoLEP), the Central Bank (CB), and the National Academy of Agricultural Science (NAAS). Development agencies and donors, e.g. The World Food Programme (WFP), FAO, UNICEF, the Swiss Agency for Development and Cooperation (SDC), and the European aid coordination office, were also contacted by the mission. In Ryanggang and North Hwangae Provinces, the concerned county officials of cooperative farm management coordination committees (CCFMCs) and of the CB branches accompanied the mission. The mission visited 13 Cooperative Farms (CFs), six in Ryanggang Province and seven in North Hwangae Province. The mission independently chose the CFs and the households for the conduction of interviews. This provided a good opportunity for the triangulation of otherwise available information and the discovery of additional aspects.

3. **Country and sector background.** DPRK is a country of 122,762 square km, with a population estimated at 23 million people. DPRK has not published official statistics in the past 30 years. The few available data on its economy, health, nutrition and agricultural resources are almost always estimates made by research institutions abroad. According to the most recent estimates (2004), the country had a GDP per capita of US\$546, with an annual growth of 4.15 per cent. Agriculture was estimated to account for 18.4 per cent of GDP. The sector went through collectivisation in the mid 1950s, which brought about mechanisation, the systematic use of chemical inputs and a national irrigation network. Cooperative farms, approximately 3,000 today, and state farms were created at this time. This doubled agricultural yields up to the mid 1980s. Agricultural productivity has since fallen, due to a variety of factors, such as overuse of chemical fertilisers and concurrent soil acidification, and widespread mono-cropping of staple crops, particularly on marginal soils. With the collapse of the Soviet Union in 1990, DPRK ceased to have privileged markets and access to cheap energy and other key inputs, which also affected the high input agriculture practised until then.

4. In 1995-97, a series of droughts and flooding exacerbated the situation leading to widespread famine. The country had to rely on WFP food supplies for about 10 years until 2005 when it declared that no further emergency aid was needed but development assistance would be accepted. With less than 20 per cent of its land areas being apt for agricultural use, pressure on sloping land and forests continue to be substantial. Since 1990, DPRK lost 20 per cent of its forest area, and 10 per cent of the

national food supply is estimated to originate from deforested sloping areas, while the official agricultural production apparatus exclusively relies on state and CFs.

5. **Evolving agricultural policy context.** With reduced support from neighbouring socialist states and scarce availability of external inputs since the early 1990's, the national strategy and overriding philosophy of self-reliance (Juche) has been revived with regard to agricultural policies. Greater emphasis is now placed on matching crops to soil characteristics, season and climatic conditions across the country. Focus has moved to improved seeds, intensifying production with double cropping, use of organic and bio-fertilisers, as well as bio-pesticides, that can be produced in the country. Mechanisation is still seen as an important priority as is the expansion of irrigated areas and reduced reliance on power for irrigation¹. State-owned, centralised and provincial input supply schemes, as well as state agricultural marketing organizations that feed into the Public Distribution System or export channels are all part of DPRK's agricultural policy.

6. In July 2002, the Government of DPRK operated an economic policy shift on many levels that affected project implementation and impact. CFs were granted more autonomy in production planning, which facilitated the introduction of new crop rotations recommended by the project. However, the national currency (KPW) was devaluated about 70 times against the US\$ and administered prices and wages were adjusted by a factor ranging from thirty to eighty. CF household cash reserves or bank accounts were not adjusted, nearly cancelling household debts and savings.

7. **Project background.** DPRK is neither a member of the World Bank nor of the Asian Development Bank. Therefore, IFAD is at the moment the only International Financial Institution lending to the country. Since the beginning of its operations in 1995, which coincides with the onset of the large food crisis, IFAD has financed three projects in DPRK for a total loan amount of US\$69 million. The Sericulture Development Project ran from 1996 to 2002 and the Crop and Livestock Development Project from 1997 to 2003. A Country Strategic Opportunities Paper (COSOP) was produced in 2000. According to this document, IFAD operations were to concentrate on reviving production in the disadvantaged uplands with focus on specific geographic areas, CFs and eventually households within CFs.

8. The project area included 46 cooperative farms in four counties. Two of these counties, Samsu and Pungso, are in the far north of the country, in Ryanggang Province; while the other two, Singye and Goksan Counties, are located in the south-east of the capital in North Hwangae Province. Of the 46 cooperatives, 37 cooperatives were involved in all components and nine were included only within the environmental preservation and credit components.

II. PROJECT PERFORMANCE

Design Features

9. The Uplands Food Security Project (UFSP) was approved by the Executive Board of IFAD in December 2000. It became effective in April 2001 and will close in June 2008 after two extensions, with the original closing set for December 2006. The goal was to implement balanced, sustainable and replicable cropping systems and environment management, which improve soil fertility and enable higher and more secure production to lead to improved living standards for 18,000 low-income households on 46 cooperative farms in upland areas, directly benefiting 61,000 persons. The project has seven components which correspond to the project's seven specific objectives (see table below). The total estimated cost at appraisal was US\$41.77 million of which US\$24.44 million from IFAD loans, US\$4.44 million from the DPRK Government, US\$7.18 million from co-financiers (WFP, FAO, United Nations Development Programme (UNDP) and Cooperazione e Sviluppo Italiana (CESVI)) and US\$5.71 million from beneficiaries. UNOPS was assigned the function of Cooperating Institution (CI) for loan administration and project supervision.

¹ Agricultural Policy Document provided in translation by PMU on 1 May 2008.

Project Components and Specific Objectives

Component	Specific Objective	Intervention Strategy	Per Cent Base Cost
1. Sustainable crop production systems	Improved crop rotations, farming practices and soil fertility, generating increased yield, income and labour productivity.	Assist CFs in introducing sound crop combinations and sustainable farming systems, providing models for demonstration to other CFs	55
2. Potato seed supply development	Greater availability to cooperative farms of high quality and disease free potato seed.	Assist the Potato Research Institute and the participating counties' tissue culture centres; Provide support to multiply the expanded seed volumes	2
3. Environment preservation	Improved micro-catchment planning, fuel wood plantations and erosion control measures preserving and enhancing the environment.	Support tree planting, bunding, rudimentary terracing and the construction of storm drains	31
4. Household and cooperative credit	Credit services encouraging and enabling livestock and other enterprises by cooperatives and their farmer members.	Provide additional institutional credit to finance investment in income-generating production activities, mainly livestock	4
5. Community facilities and services	Capacity of cooperative communities to select and undertake productive projects.	Establish a fund to stimulate the process of participatory planning and investment at the farm level	3
6. Farm output processing	Improved processing capacity adding value to crop production at cooperative farms.	Help the cooperatives to investigate and develop opportunities for processing farm products	1
7. Project implementation support	Technical and managerial capacity of national, provincial and county agencies and cooperatives to plan and implement projects.	Provide support to PMU, Provincial Rural Economy Committee (PREC)s ^a and CCFMCs in carrying out their roles.	4

^a Provincial Rural Economy Committees

Source: Appraisal report

Implementation Results

10. Sustainable crop production systems component (61.1 per cent of project cost at completion). The core element of the component was the introduction of sound crop rotations on 18,000 ha in the 37 CFs with full project support, supplemented by the supply of annual crop inputs, such as fertilizer and pesticides, and the provision of mechanisation packages. After an initial delay caused by a misunderstanding of the project approach, improved crop rotations are now mainstream in the supported CFs. Farm input supply was halted in 2005, on the basis of an Mid-term Review (MTR) recommendation, as the fertiliser procured by the project was not systematically applied to the soil classes foreseen at appraisal and the project inputs mostly replaced inputs formerly obtained by CFs from other sources. Farm machinery was successfully supplied to the CFs, however without taking into account the extreme difficulties of the CFs to procure spare parts and tyres, for lack of adequate maintenance capacity and of access to hard currency. Farm management support was provided through training, coaching and study tours for CCFMCs and CFs.

11. Potato seed supply development component (2.6 per cent). This component addressed the lack of high quality and virus-free potato seed in the project area. The project provided inputs and equipment to the Potato Research Institute at Daehongdan in Ryaggang Province and supported renovation and equipment for four county level potato tissue culture factories, where potato foundation seed is multiplied in-vitro in greenhouse multiplication units. The project also supported field level propagation of potato seeds in 37 CFs. Specialists from NAAS were actively involved in implementation.

12. Environment preservation component (14.3 per cent). MoLEP was responsible for the coordination of this component. Five thousand five hundred ha of fuel wood plantations for 46 CFs

have been planted and/or replanted against a target of 5,400 ha. This was possible, despite the very limited funding from WFP in the form of Food for Work². MoLEP also reports having undertaken bunding, terracing and construction of storm drains for the protection of 1,200 ha of sloping land, i.e. 50 per cent of the target at appraisal.

13. **Household and cooperative credit component (15.6 per cent).** CB was given the overall responsibility of implementing the credit scheme whereby 80 per cent of the earmarked funds were for households, and 20 per cent for CFs, which raised small livestock that was outsourced for further rearing and/or fattening to the households in a given CF. In total, more than 45,000 households benefited through repeated loans, with a balance of 17,000 outstanding loans by the end of 2007, i.e. according to the appraisal target. Based on this success, the project funds allocated to this component were doubled during project life, and the portion earmarked for CF credit was raised to 50 per cent. However, the revolving fund for household and CF loans was not adjusted when administered prices and wages were dramatically increased in 2002, thus losing most of its value. A reallocation of US\$2.23 million of unspent loan funds to the household credit fund was agreed one month before project completion.

14. **Community facilities and services component (3.6 per cent).** This component was implemented from 2006 onwards only, on the basis of a training of PMU and CF staff in Participatory Rural Appraisal (PRA). The delay was caused by the absence of UNDP funding for hiring international technical assistance (TA) to train CF managers and members in participatory planning techniques. It was only when IFAD ultimately agreed to provide a grant that the training could take place and the component could successfully be implemented. CF management and members were enabled to prioritise community facilities and services and to submit respective projects to the PMU. The project funded building materials for 163 community facilities, ranging from cultural centres, kindergartens, clinics, bridges, and threshing sites.

15. **Farm output processing component (1.2 per cent).** The Appraisal Report required the project to carry out feasibility studies covering all processing opportunities to add value to farm outputs. These feasibility studies were conducted with a long delay in 2006, again because UNDP funding originally committed for those studies was not forthcoming. The studies were ultimately carried out with an IFAD grant. Starting in 2006, rice mills, oil presses, feed crushers, noodle makers and potato starch plants were procured, totalling 102 sets of machinery.

16. **Project implementation support component (1.6 per cent).** The PMU managed the procurement of machinery, equipment and farming inputs and assured their distribution through the established channels of MoA. In addition, the PMU was responsible for project coordination, training and monitoring and evaluation (M&E) activities, and for convening the monthly Steering Committee meetings. Nine short-term TA missions were conducted over the life of the project, which was significantly less than planned due to FAO, UNDP and CESVI financing not being fully tapped for these inputs, and the reluctance of the Government to finance international TA out of loan proceeds. Trainings on M&E, procurement, environmental planning, whole farm planning and project reporting were financed by UNDP. WFP financed TA on Food for Work project assistance planning and IFAD financed TA on PRA and agro-processing. Only the very last TA mission, on Financial Management, was financed from the IFAD loan. In terms of M&E, the PMU was successful in conducting a household survey with repeats on the same household sample at regular intervals, and in establishing a CF performance database of the participating CFs. However, the PMU had considerable difficulty to obtain timely and comprehensive project information from the partner institutions, especially the CB. This made the task of the evaluation mission particularly challenging. As per 31 May 2008, US\$35.45 million or 84.9 per cent of the original financial outlay had been used. At loan closing (31 December 2008) the IFAD loan was 100 per cent disbursed.

² WFP only provided 8.7 per cent of the US\$6 million promised at design, apparently because the PMU did not file any additional requests following correct procedure and because of serious communication constraints between WFP and the PMU.

Performance Assessment

17. **Relevance.** It is fair to say that the project objectives were consistent with the agricultural and rural development policy of DPRK and with the IFAD COSOP. Project design included learning from previous IFAD projects in DPRK. The appraisal report integrated relevant inputs from the IFAD internal quality enhancement and quality assurance processes. However, because of the design missions' limited access to information, project design documents remain superficial in terms of analysis of causes of rural poverty, constrained agricultural productivity, environmental degradation on sloping lands and so on. As a result, the technical orientations of the projects' main component, sustainable crop production systems, were partly inappropriate and did not address three main issues, i.e. the lack of farm machinery maintenance capacity, the need for alternative agronomic solutions to substitute imported inputs and widespread soil acidity. Other project component were considered relevant although the environment preservation component focussed mainly on reforestation of sloping lands and did not promote sustainable use of sloping lands, although the food security of an important part of the rural population living outside CFs depends on those lands.

18. Overall, project partnerships were weakly developed during project design, both with national and international institutions. The involvement of co-financiers was well intentioned, but inadequately prepared and not secured by formal agreements between the borrower and those co-financiers as foreseen by the Loan Agreement. This led to the nearly complete failure of honouring expected project participation as outlined in project design documents. Finally, project design did not take into account the serious communication issues between the PMU, IFAD and other international development partners, which still prevail today.

19. **Effectiveness.** After a four-year delay caused by misinterpreted appraisal recommendations and an inappropriate top-down approach, improved crop rotations were successfully introduced in the supported CFs (on 31,000 ha against a target of 18,000 ha) and had a positive effect on soil fertility. The insertion of fodder and green manure crops into the rotation is taking place on an experimental basis in North Hwangae Province only, and not systematically in all rotations as expected at appraisal, probably due to the national priority given to cereals and potato production for human consumption. The provision of chemical fertilizer did not have the desired effect on soil fertility because of prevailing soil acidity, which was probably exacerbated by an unbalanced fertilizer mix.

20. The other project components were effective: 12 million disease-free potato mini tubers were produced during project life and provided to project farm cooperatives. The required number of high quality potato tubers has apparently achieved area coverage, as verified by the mission in Pungso County. Environment preservation activities have been delayed by structural coordination problems between the project, MoA, MoLEP and WFP, and the practical absence of WFP funding. However, in the end, the target of 5,400 ha of wood lots has been overshot, with MoLEP and CF contributions for the major part. Survival rates were reported as quite high in North Hwangae (some 80-90 per cent), but can be significantly lower in Ryanggang, particularly in poor rainfall years (down to 50 per cent). Anti-erosion measures attained 50 per cent of the planned 2,400 ha.

21. The credit component was implemented effectively by CB and CFs, with zero default rates and for the anticipated number of beneficiaries by the end of 2007. Women were the main borrowers for household credit, receiving about 90 per cent of the loans. The participatory planning approach for community investments introduced by the project was successfully applied and all 37 CFs concerned have been able to select, plan and implement community facilities and services in a participatory manner, although with a substantial delay. Farm output processing facilities installed since late 2006 appear to be in regular use.

22. **Efficiency.** Evaluating project efficiency in economic or financial terms in DPRK is particularly challenging because of the scarcity of statistics and comparative data and the administered nature of costs and prices. Therefore, no cost benefit analysis was attempted by the mission, but efficiency was addressed in other terms. The procurement of farm inputs and machinery under the sustainable crop production systems component, the credit component and the potato seed supply component were implemented according to schedule. However, implementation was slow during the first half of the

project for all other (sub-)components. The main reasons for delays incurred were: (i) the lack of clarity or inappropriateness of certain design features, in particular concerning the largest project component (sustainable crop production systems); (ii) the meagre contribution and early withdrawal of international project partners (WFP, FAO and UNDP) due to the lack of formal agreements at project start-up and, subsequently, the poor communication and coordination between the PMU and project partners; and (iii) the late decisive involvement of national partners such as NAAS and provincial agriculture universities. Consequently, the MTR recommended a one-year extension of the project's closing date. The project suddenly shifted gears, by allowing CFs to prepare their own crop rotation plans and field trials with guidance from NAAS scientists and the CCFMCs, and by mobilizing IFAD grant funds for further TA to the project. As a result, the project succeeded in making up for most delays by mid-2007. A second extension to the project was agreed following the supervision mission of 2007, to allow the project to: (i) internationally procure farming supplies for US\$1.5 million approximately, to be sold to CFs, the revenue of which would be allocated to the household credit revolving fund with CB; (ii) benefit from technical assistance in financial management; and (iii) bring its financial records up to standard.

23. Procurement prices of farm inputs and machinery, purchased mostly from China, were lower than international standards. However, in connection with these two major cost items of the project, the mission perceives a low end-user efficiency, due to the limited plant nutrient availability in acid soils and the down-times of agricultural machinery for lack of spare parts and poor machinery maintenance capacity. This was to the detriment of the participating CFs, who had to pay for all items procured either directly or via standard loans. On the other hand, they all obtained farm inputs and machinery at the administered prices substantially below economic prices.

24. An estimated US\$1.2 million of project financing for the credit component was lost following the administered price adjustment of 2002 without adjustment of the revolving fund. Moreover, US\$2.23 million of unspent loan proceeds were reallocated to the household credit component following the Government's request at the very end of the project without proper measures to ensure that the full value would reach the beneficiaries. The value of the amount reaching the beneficiaries in local currency is far below the opportunity cost of the amount in hard currency transferred by IFAD to DPRK.

III. PERFORMANCE OF PARTNERS

25. While the mission commends **IFAD**, as the only International Financial Institution (IFI) in DPRK, for its support to the rural poor in this particularly challenging institutional context, IFAD performance was rated moderately unsatisfactory because of: (i) the failure to foresee and address communication difficulties; (ii) the inability to finalize co-financing arrangements with other development partners; (iii) the inadequate provision of continuity in country programme management and of implementation support; and (iv) the inappropriate reallocation of a large amount of loan proceeds at the very end of the project. The performance of **UNOPS** was also rated moderately unsatisfactory. The quality of supervision reports was acceptable overall, considering the difficulties met by supervision teams to access information and project sites. However, until the Mid-term Review, recommendations were sometimes inconsistent on key issues such as crop rotations, and often lacked clarity. The main causes for this were the lack of continuity of supervision team members and the insufficient time for proper discussion of findings and recommendations with project partners at the end of each supervision mission. UNOPS also overlooked several cases of procurement mismanagement by the project. As for **Government** performance, the policy shift in 2002 allowed for more autonomy in production planning for the CFs, which facilitated the implementation of component 1 in particular. Strong policy support helped the project to achieve its reforestation targets under the environment preservation component with full commitment from MoLEP and CFs alike, without the large volumes of Food for Work originally to be provided by WFP. However, the devaluation of the KPW coupled to the adjustment of prices in 2002, strongly reduced the real value of the credit revolving funds. Also, efforts by MoA, as the responsible line ministry of the UFSP, to support the establishment of partnerships between the project and national and international institutions in DPRK were insufficient. All through the project life, information was managed in a very restricted manner and UNOPS and IFAD missions were not readily granted access to the field.

Limited freedom of movement and scarce access to background data for project designs missions have handicapped the project design process, and thus affected project relevance. The project **beneficiaries** deserve a highly satisfactory performance rating. The success of the household credit component is the result of much extra work above and beyond the regular duties of beneficiaries in their CFs.

IV. RURAL POVERTY IMPACT AND OTHER PERFORMANCE CRITERIA

26. **Rural poverty reduction impact.** Household income and assets increased significantly over project life for about 20,000 households in the participating 46 CFs, with a concomitant increase in purchasing power, all directly induced by the household credit component. Savings also increased over time, but mostly under the form of household appliances because of the limited opportunities for households to reinvest income in productive assets, as current Government policy restricts individual economic activities in CFs, and the risks related to monetary saving. By strengthening economic activities at their own risk and responsibility, the households gained social capital and empowerment, especially women who were the clients of 90 per cent of the household loans extended. Food security was enhanced in two ways, first by increased agricultural productivity, which allowed higher farm dividends to be paid to the households, and second by meat and milk produced at household level, thanks to the credit component. Wood lots planted under the environmental preservation component now correspond, in average, to 0.3 ha per household, which is deemed sufficient for annual fuel wood requirements. However, these achievements are marginal the face of past and continuing encroachment of forest and cultivation of sloping land, which remain a matter of concern for the natural resources and the environment of DPRK. In terms of institutions and policies, some relaxation of the rigidly planned agricultural apparatus is now visible, to which the project has not directly contributed but rather was in position to take advantage of. Overall, rural poverty reduction impacts are rated as satisfactory.

27. **Sustainability.** Factors that enhance sustainability are the following: households, particularly women, have been enabled to assume risk and responsibilities. This is the essence of social capital and empowerment, which stands a fair change of being sustainable. The development of a livestock breeding and fattening system, in tandem between CFs and households, has generated assets, income, savings and food security. The widespread adoption of improved crop rotations is technically sound and very likely to be continued after the project. The concomitant shift from rigid top-down central planning to a more participatory method, albeit still within relatively narrow boundaries, bears the potential of unleashing additional human talent at various levels. In addition, the mission notes the likelihood of (i) sustainability of the potato seeds supply and (ii) continuity of the environmental preservation efforts. On the other hand, the UFSP is marred by a number of factors that constrain sustainability. The dependency from imported machinery, spare parts, inputs and energy is pervasive for the agricultural sector as a whole, and the USFP granted only a temporary and marginal relief. Moreover, the visibly continuing process of cultivating sloped land originally under forest, outside the official array of CFs, is an important environmental sustainability concern. Despite the achievements, the resource base of the CFs and households remains fragile. A consecutive series of bad harvests or new administered price adjustments could compromise the respectable impacts achieved by UFSP.

28. **Innovation, replication and scaling up.** The project promoted the introduction of a few important technical innovations (crop rotations, potato seed multiplication scheme) which appear to have been replicated outside project CFs. Field trials to further improve agricultural practices, although not directly promoted by the project, are underway. A downside with regard to further scaling up those innovations, is that research and development findings are not of the public domain in DPRK. An important innovation was present in the credit component, which promoted household level animal breeding and fattening activities, taking advantage of individual zeal and initiative, in complement and not in competition with collective farming activities. Also, the efficient manner in which the credit component was handled (most transaction costs were outsourced to the CFs) was well adapted to the cooperative system in DPRK and may be considered innovative. The successful credit component is, however, apparently not yet being replicated outside the project CFs. Current Government policy also restricts opportunities for CF households to develop individual economic activities, which constrains the further increase of benefits from household credit.

V. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

29. In general terms, the UFSP has contributed in attaining IFAD's strategic objectives: (i) Poverty alleviation by targeting rural poor in marginal areas with food security constraints; and (ii) Empowering beneficiaries through interventions such as household credit, natural resources management, community facilities and services and farm output processing.

30. The project was relevant in the sense that it addressed food security and rural poverty constraints at the time of appraisal and chose marginal upland areas in a farming systems approach, very much in line with the COSOP. On the other hand, the design of the project's main component, contained some important flaws which were mainly due to a lack of involvement of project stakeholders and other local expertise at the design stage. Project design also underestimated the serious communication problems and failed to secure the participation of co-financiers.

31. Despite the flaws mentioned above, the project was implemented with satisfactory effectiveness, although with important delays in the first project half. Efficiency was also affected due to the Korea Won (KPW) devaluation in 2002 which led to the loss of about one third of IFAD funds invested in the credit component, and limited end-user efficiencies of input and machinery imports.

32. Overall poverty reduction impact was satisfactory, notably in terms of household income and assets, social capital and empowerment and agricultural productivity and food security. The mission concludes that these achievements were possible to a large extent due to the CF and household credit component, which unleashed enthusiasm and talent and eventually generated the above mentioned impacts. Small livestock reared and fattened by households, in conjunction with an organized supply of young stock and close-by marketing channels, appears to be a winning formula for making important leaps in rural poverty reduction. Tapping the talents of household as units of economic activity has particularly paid off: with only 10 per cent of actual project cost, the returns were broad-based, significant and harbouring a high potential of sustainability.

33. However, a number of factors limit sustainability of project impacts, such as the continuing dependency on imports of agricultural production in CFs, the increasing cultivation of sloped land originally under forest, outside the official array of CFs, and the enduring fragility of the resource base of the CFs and households.

34. The table on the next page summarizes the evaluation ratings of the UFSP, with an overall rating of project achievement of 4 (moderately satisfactory).

Evaluation Ratings of the UFSP

Evaluation Criteria	Ratings
Project performance	
Relevance	4
Effectiveness	5
Efficiency	3
Overall project performance	4
Rural poverty impact	
Household income and assets	5
Human and social capital and empowerment	6
Food security and agricultural productivity	5
Natural resources and the environment	4
Institutions and policies	4
Overall rural poverty impact	5
Other performance criteria	
Sustainability	4
Innovation, replication and scaling up	4
Performance of partners	
IFAD	3
UNOPS	3
Government	4
Beneficiaries	6
Overall project achievement	4

Recommendations

35. As the UFSP was an interim evaluation, the recommendations aim at setting a preliminary stage for the design of a subsequent IFAD operation in DPRK. Agreement on those recommendations and principles should be formalized in the forthcoming results-based COSOP – a necessary step before initiating the design of a follow-up IFAD investment loan. With this in mind, the evaluation makes the following recommendations:

Recommendation 1: Project Design

36. To ensure that future IFAD intervention in DPRK respond to the needs of the rural poor and propose sound and sustainable technical and institutional solutions to rural development constraints, the design process for future IFAD interventions in DPRK would require: (a) Ample participation by the envisaged target population, and its existing forms of organization; (b) Strong collaboration with national and international rural development partners; (c) The Government to grant full access to relevant information required for a sound project design; and (d) IFAD to mobilize its own resources to enhance its knowledge and understanding of the country and the needs of the rural poor for instance in the framework of the preparation of the new COSOP.

Recommendation 2: Partnerships

37. These stand out as the key to development cooperation with DPRK, and therefore: (a) IFAD should give particular attention to enhancing its partnerships and building new collaborations with national and international institutions concerned with agricultural and rural development in DPRK; (b) The Government should actively encourage partnerships among national and international institutions and take up a coordinating role; (c) The Government should also promote communication and information sharing between the PMU and project partners, all through the project cycle; and (d) Project partnerships, including co-financing arrangements, should be carefully chosen and formally established with a clear distribution of responsibilities among partners, as early as possible in the project design process.

Recommendation 3: Sustainability

38. Environmental, technical and economical sustainability of rural development efforts and achievements should be given greater attention. In particular: (a) Environmental components in IFAD projects should focus not only on reforestation and protection, but also on sustainable and profitable use of sloping land, by the important part of the rural poor today that live outside the CFs; (b) The Government should consider the challenges of working the land and maintaining soil fertility in a context of very limited access to imports as an opportunity for developing alternative social production arrangements, such as centring the responsibility for agricultural production on autonomous but well supported sub-work teams within cooperative farm structures that would assume the function of service and credit providers; and (c) Innovative technical options to increase and maintain soil fertility on CF lands should be further explored by field trials and, if found adequate, divulged to CFs for generalisation. This recommendation could be initiated with the support of an IFAD grant complemented by technical assistance from national and international rural development partners.

Recommendation 4: Household Credit

39. Considering its important impact on income, food security and empowerment of rural households, the household credit scheme could be scaled up to all CFs in DPRK, possibly with the support of a new IFAD intervention. However, it would be necessary that: (a) The reporting system of CB towards the PMU and project partners be improved, and the bookkeeping system at farm level be standardized; (b) Additional degrees of entrepreneurial freedom for potential borrowers be explored and agreed upon; (c) The concomitant lending for small livestock to CFs, either through work teams or sub-work teams, remain an option, which may bear a significant potential for synergy with household credit.

Democratic Peoples' Republic of Korea

Uplands Food Security Project (UFSP)

Interim Evaluation

Agreement at Completion Point

A. INTRODUCTION

1. In April 2008, IFAD's Office of Evaluation (OE) conducted an interim evaluation of the IFAD-funded Uplands Food Security Project (UFSP) in the Democratic People's Republic of Korea (DPRK). This was the first evaluation by OE in the country. Its main objectives were to: (i) assess the performance and impact of the project; and (ii) generate a series of findings and recommendations for future projects and programmes financed by IFAD in the country.

2. On 26 November 2008, a learning workshop was held in Pyongyang to discuss the main results of the evaluation, and to provide inputs for the preparation of this agreement at completion point (ACP). The latter presents an agreement between IFAD (represented by the Asia and the Pacific Division) and the Government of DPRK (represented by the Ministry of Agriculture) on the key evaluation findings and recommendations, and proposals on how to act upon them.

B. MAIN EVALUATION FINDINGS

3. **Main results per component.** Of the seven project components, the sustainable crop production systems component was the most significant, with 56 percent of the original base cost in favour of 37 cooperative farms (CFs). It promoted the introduction of three-year crop rotations, albeit without the broad-based insertion of fodder crops. The component also included the procurement of farm machinery and farm inputs, mostly fertilizer. The second component, potato seed supply development, was successful as it responded to a key limitation of potato production, i.e. disease-free quality seed. Under the third component, environment preservation, the project encouraged 46 CFs to plant and enrich fuel wood plots on 5,500 hectares of nearby sloping lands.¹

4. Credits for CFs and individual households were the object of the fourth component. Both types of borrowers took up small livestock breeding and fattening activities thanks to available credit, with a ceiling of less than US\$70 per household. The target of reaching close to 18,000 households was achieved, covering 46 CFs. The fifth and sixth components, both very small in terms of financing, aimed at strengthening community facilities and services in 37 CFs. Both were implemented rather late, but still resulted in the construction of 162 community facilities such as kindergartens, nurseries, clinics and training centres and the procurement of more than 100 items of farm output processing equipment, which are now in operation and range from flour and rice mills to oil and potato starch extractors. Under the seventh component, the project management unit (PMU) was strengthened, enabling it to assure project implementation.

5. **Project performance.** The project was relevant in that it addressed significant rural poverty in relatively remote and resource poor areas of the country. Its design drew lessons from former IFAD operations in the country, especially with regard to the credit component. However, relevance was hampered by substantial information gaps at design and a deficient involvement of local expertise. Thus, project design was unclear regarding the cropping systems to be promoted under the main

¹ Sloping lands are defined in DPRK as lands with slopes of 15 per cent or more. These lands are managed by the Ministry of Land and Environmental Protection.

component, and did not take into account the pervasive soil acidity in most of the participating CFs. As it turned out, crop response to fertilizer applications was constrained because of this phenomenon, which the project did not address. Moreover, project design ignored the communication problems between the PMU and project partners, including IFAD, and failed to formalize co-financing and technical assistance agreements. As a result, neither food-for-work from the World Food Programme (WFP) nor technical assistance from the Food and Agriculture Organization (FAO) and the United Nations Development Programme (UNDP) were delivered as envisaged.

6. During several years the project had very limited success in introducing sound crop rotations because of inadequate approaches and technical advice. However, after a less directive approach was adopted favouring capacity-building in collaboration with the National Academy for Agricultural Sciences (NAAS), the project was effective in introducing sound crop rotations on more than 31,000 hectares against a target of 18,000 hectares. The project also succeeded in providing farm machinery, farm inputs, community facilities and services, and the farm output processing equipment. It also put in place the credit component in favour of 46 CFs and 18,000 individual households. In terms of efficiency, the goods were procured at comparatively competitive prices. However, end-user efficiency was constrained due to bottlenecks in maintaining farm machinery and the less than satisfactory crop response to fertiliser application because of widespread soil acidity. The credit component suffered an important efficiency loss.

7. **Rural poverty impact.** The impacts achieved in the domains of household assets and income, social capital and empowerment as well as agricultural productivity and food security were satisfactory, with the credit component having played a pivotal role. Over project life, household incomes increased by a factor of two in average, while livestock income – a direct consequence of the credit component – tended to grow more rapidly than farm dividends. The credit component empowered women in particular, as more than 90 percent of the loans were underwritten by women, and talent was unleashed to run small scale livestock operations at own risk and responsibility. This has contributed to enhanced food security. The impacts regarding natural resources and the environment were respectable in the immediate vicinity of the CFs, but unavoidably limited when considering the degree of degradation of sloping land on a broader scale.

8. **Sustainability.** The project has invested in areas with a distinct potential for sustainability, such as new crop rotations, the technically sound production of disease free potato seeds, and small livestock breeding and fattening systems, with CF work teams and households working in tandem. Increased household incomes and assets are likely to protect the households from future shock and stress. However, farm machinery procured by the project is losing its usefulness due to difficult access to spare parts and lack of adequate machinery maintenance capacity. The overall resource base of the CFs is still fragile, and the challenge of producing enough food for the country's population remains substantial. The encroaching of sloping lands is a matter of environmental concern, which the Government expects to resolve in cooperation with international partners.

9. **Innovation.** The project was successful in devising a low-cost and zero-risk credit component, which can be considered innovative. There is no evidence, however, of replication or scaling up of the household credit scheme. Although the new crop rotations took time to be adopted they may be the expression of local expertise and resolve rather than project-driven innovation. In matters of comprehensive soil fertility management, the project failed to take advantage of available local knowledge as no specific activities, such as systematic on-farm trials, had been included in the design.

10. **Performance of partners.** IFAD deserves the credit for having designed a relevant project in rural poverty reduction. On the other hand, important aspects, such as on-site fact-finding, the formation of solid partnerships with co-financiers and the securing of reliable communication links, were neglected both at design and during project implementation. The United Nations Office for Project Support (UNOPS) was in a similar position, confronted with the task of supervising a relatively complex project in an environment characterized by scarce availability of information and restricted access. While the performance of the PMU was respectable, considering all the odds, the other national partners remained reclusive in terms of information sharing and did not provide all

relevant technical, economic and social data in time. The partners that exhibited outstanding performance were the beneficiaries, the CFs and involved households alike. The key potential for future success lies with the talent and determination of these men and women.

C. RECOMMENDATIONS

11. As this was an interim evaluation, the recommendations aim at setting a preliminary stage for the design of a subsequent IFAD operation in DPRK. They will be taken into account in the forthcoming results-based IFAD country strategic opportunities paper (COSOP) – a necessary step before initiating the design of a follow-up IFAD investment loan. The table below presents the evaluation recommendations² and the agreement status by IFAD and the Pacific and the Government of DPRK. In accordance with the IFAD Evaluation Policy, in case of disagreement, views are justified by both parties.

Evaluation Recommendation	Government of DPRK	IFAD
<p><u>Recommendation 1: Project design</u></p> <p>To ensure that future IFAD interventions in DPRK respond to the needs of the rural poor and propose sound and sustainable technical and institutional solutions to rural development constraints, the design process for future IFAD interventions in the country will require:</p> <ul style="list-style-type: none"> a. Broad participation by the envisaged target population and their representatives at all levels (households, land user groups, sub-work teams, work teams, CF management, county officials etc.). Design teams will spend considerable time in the field, meeting with poor people and observing the reality in rural areas. The views and needs of intended beneficiaries will be clearly reflected in project design documents; b. Strong collaboration with national and international rural development partners. Design teams will be composed of staff from potentially partnering institutions. Along the design process frequent stakeholder meetings will be organized by the Government to ensure that ideas and opinions are regularly shared; c. The Government to grant full access to relevant information required for a sound project design, such as the national poverty reduction and rural development strategies, data on population and the economy, current agricultural practices, agricultural research results, information on health and education in the rural areas and so on. IFAD will request such information well in advance of field missions and be as precise as possible in its requests. The Government will provide information requested to IFAD before mission arrival; and d. IFAD to mobilize its own resources to enhance its knowledge and understanding of the socio-economic country context and the needs of the rural poor, considering that little country economic and sector work on DPRK by other international institutions exists. The preparation of the new COSOP is the best opportunity to start building a solid knowledge base. 	<p>The Government fully agrees with the recommendation and its sub-recommendations.</p>	<p>IFAD fully agrees with the recommendation and its sub-recommendations.</p>

² Additions made to the interim evaluation recommendations, based upon the deliberations held during the learning workshop in Pyongyang on 26 November 2008 with the main project partners, are shown in *italics*.

Evaluation Recommendation	Government of DPRK	IFAD
<p><u>Recommendation 2: Partnerships</u></p> <p>Partnerships are crucial to development cooperation with DPRK, not only for the design of interventions (see recommendation 1b) but all through project implementation, monitoring and evaluation. Collaborations facilitate information sharing, improve coordination of efforts, ensure that each partner's comparative advantages are mobilized and increase accountability. Therefore:</p> <ol style="list-style-type: none"> a. IFAD will give particular attention to enhancing its partnerships and building new collaborations with national and international institutions concerned with agricultural and rural development in DPRK, such as MoA, NAAS, Ministry of Land and Environment Protection (MoLEP), FAO, WFP, Swiss Development Cooperation, the European Commission and several international NGOs. b. The Government will actively encourage partnerships among national and international institutions. The coordinating role at the strategic level will be taken up by the Ministry of Foreign Affairs and at the technical/implementation level by the concerned line ministry. c. The Government will also promote information sharing between the PMU and project partners, all through the project cycle, with the aim of developing a transparent framework conducive to sound planning, implementation and monitoring. Information sharing will be done using various media such as county- and province-level technical workshops and training, workshops and seminars at the line Ministry, radio and television, publications. It is essential that project teams be granted permanent access to international phone, fax and e-mail. d. Project partnerships, including co-financing arrangements, will be formally established with a clear distribution of responsibilities among partners, as early as possible in the project design process. Coordination mechanisms among partners will also be clearly specified. 	<p>The Government fully agrees with the recommendation and its sub-recommendations.</p>	<p>IFAD fully agrees with the recommendation and its sub-recommendations.</p>
<p><u>Recommendation 3: Sustainability</u></p> <p>Environmental, technical and economical sustainability of rural development efforts and achievements will be given greater attention in project design and implementation. In particular:</p> <ol style="list-style-type: none"> a. Environmental components in IFAD projects will focus not only on reforestation and protection of sloping lands, but also on their sustainable and profitable use and management. An important part of the rural poor today live outside the CFs. Their uncontrolled cultivation of sloping lands constitutes an important threat to the environment and agricultural production in CFs. IFAD and its partners should investigate ways to support this population group early on to develop 	<p>The Government partially agrees with the recommendation.</p> <p>Not agreed. The cultivation of sloping lands (over 15% slope) in DPRK goes against government policy. Sloping land cultivation had been triggered by continuous floods during the 1990s. As sloping lands are property of</p>	<p>IFAD fully agrees with the recommendation and its sub-recommendations.</p> <p>Although the ongoing reforestation of sloping lands will contribute to resolve the environmental issue, it is important</p>

Evaluation Recommendation	Government of DPRK	IFAD
<p><u>Recommendation 3: Sustainability (continued)</u></p> <p>sustainable agricultural production systems. The Government will consider the formal allocation of plots on sloping land to CF members and others, and provide advice on measures to avoid land degradation.</p> <p>b. The Government will consider the challenges of working the land and maintaining soil fertility in a context of very limited access to imported inputs, machinery and energy, as an opportunity for designing and developing new alternative measures. A sub-work team, by average size, composition and land holding, could be perceived as a group of small producers. Properly organized and endowed with adequate autonomy and incentives, sub-work teams could evolve into highly motivated crop and livestock production groups, within cooperative farm structures. The latter would then assume the functions of credit providers and technical advisers to those independent producers' groups.</p> <p>c. Several technical options to increase and maintain soil fertility on CF and sloping lands will be further explored by field trials and, if found adequate, validated and agreed upon as best practices and disseminated widely for generalization. Those options include: the introduction of fodder crops in crop rotations, allowing for the growth of cattle herds that provide manure for soil fertilization and animal traction power; liming of adequate quantities to reduce soil acidity which is a major limiting factor for agricultural productivity; and intercropping and conservation farming practices. This sub-recommendation will be initiated with the support of an IFAD grant, complemented by technical assistance from national and international rural development partners.</p>	<p>the State, MoLEP now assumes the responsibility to convert the sloping lands into forest. During recent years, reforestation of cultivated sloping lands has been performed on a large scale thanks to energetic planting of advantageous tree species on sloping lands under due attention of the Government and in cooperation with several international organizations. The people whose food security currently depends on the cultivation of sloping lands, are provided access to enough food by the government in case the land they are cultivating is converted into forest.</p> <p>Agreed.</p> <p>Agreed.</p>	<p>to take into account that, currently, food production in DPRK does not fully meet the country's needs. Therefore, IFAD suggests, where appropriate, to plant shrubs and trees on sloping lands that contribute to food production (fruit, fodder, green manure etc.).</p>

Evaluation Recommendation	Government of DPRK	IFAD
<p><u>Recommendation 4: Household credit</u></p> <p>Considering its performance and important impact on income, food security and empowerment of rural households, the household credit scheme will be scaled up to other CFs in the country, possibly with the support of a new IFAD intervention. However, challenges regarding technical and market risks and limited opportunities for reinvestment of additional income need to be addressed. It is necessary that:</p> <p>a. Loans be used to promote innovation and diversification of household-level activities. The expansion of credit activities, which could be achieved by an increase in individual loan ceilings, requires greater opportunities to develop individual economic activities (e.g. permitted area of individual crops per household, number and type of animals bred, small scale agro-processing);</p>	<p>The Government partially agrees with the recommendation.</p> <p>The following reformulation is requested by the Government:</p> <p>a. Loans be used to promote innovation and diversification of household-level activities in accordance with Government policies. The expansion of credit activities, which will be achieved by an increase in the individual loan ceilings within the scope permitted by Government policy (up to 20% increase), requires new opportunities that are well suited to the real conditions in which the households in the CFs carry out their individual economic activities (e.g. diversification of type and increase of number of livestock bred in accordance with the Government Livestock Policy, small scale agro-processing);</p> <p>Justification provided:</p> <ul style="list-style-type: none"> • The Household credit component of UFSP was quite successful with its individual allocation amount set at KPW10,000 (approx. USD70), so that it is of our opinion that further increase of the loan ceiling within the range of 20% is preferable. • Regarding the recommendation that more opportunity in economic activity should be provided, the government had already 	<p>IFAD fully agrees with the recommendation and its sub-recommendations.</p> <p>A 20% increase of individual loan ceilings appears too low to significantly expand benefits to households and agricultural production from the credit scheme. A more significant increase of the loan ceiling would be appropriate, provided more opportunities are granted to CF households to develop individual economic activities, so that households can reinvest the additional income generated by loan-financed activities in a productive way.</p>

Evaluation Recommendation	Government of DPRK	IFAD
<p><u>Recommendation 4: Household credit (continued)</u></p> <p>b. Savings be promoted. The Central Bank (CB) will ensure that the value of savings is safeguarded against economic measures such as administered price increases;</p> <p>c. The concomitant lending for productive activities to CFs, either through work teams or sub-work teams, remain an option, which may have significant potential for synergy with household economic activities. Economic analysis will be used to determine the appropriate level of investment and activity;</p> <p>d. Credit to CFs and households be accompanied by sound technical, managerial and marketing advice; and</p> <p>e. The reporting system of CB towards the PMU and project partners be improved, and the bookkeeping system at farm level standardized.</p>	<p>provided 100 square meters of private plots for each household, considering individual demand and our country's arable land area. Therefore, under the current situation of limited arable land area, bigger private plots would pose a challenge.</p> <ul style="list-style-type: none"> • We believe that previous IFAD missions had ample opportunities to verify that diversification of species and increasing number of livestock animals kept by households, including herbivores, had been enthusiastically promoted by the Government livestock policy, providing enough breeze to household livestock activities. • About small scale agro-processing, it is our understanding that virtually all households in the project area have, for a long time already, been processing agro-products such as soy beans and potatoes, contributing to improving daily diet and generating income. <p>Agreed.</p> <p>Agreed.</p> <p>Agreed.</p> <p>Agreed.</p>	

Democratic Peoples' Republic of Korea

Uplands Food Security Project (UFSP)

Interim Evaluation

Main Report

I. EVALUATION OBJECTIVES, METHODOLOGY AND PROCESS

1. In the spring of 2008, the Office of Evaluation (OE) of the International Fund for Agricultural Development (IFAD) undertook an Interim Evaluation of the Uplands Food Security Project (UFSP) in the Democratic Peoples' Republic of Korea (DPRK). The main objectives of the evaluation were to (i) assess the performance and impact of the project; and (ii) generate a series of findings and recommendations for future projects and programmes financed by IFAD in the country. The evaluation adopted the latest methodology for project evaluations used by OE¹, focusing on four groups of evaluation criteria: (i) performance of the project measured in terms of relevance, efficiency, and effectiveness; (ii) rural poverty impact according to five impact domains; (iii) two other performance criteria: sustainability, and innovation, replication and scaling up; and (iv) performance of the partners, including IFAD, the Government of DPRK, United Nations Office for Project Services (UNOPS) and other project partners.

2. The main mission² took place from 5 April to 1 May 2008. The evaluation team held talks in Pyongyang with Government partners such as the Ministry of Agriculture (MoA), including the Project Management Unit (PMU), the Ministry of Finance (MoF), the Ministry of Land and Environmental Protection (MoLEP), the Central Bank (CB), and the National Academy of Agricultural Science (NAAS). The mission also contacted development agencies and donors, e.g. World Food Programme (WFP), Food and Agriculture Organization of the United Nations (FAO), United Nations Children's Fund (UNICEF), the Swiss Agency for Development and Cooperation (SDC), and the European aid coordination office. In Ryanggang and North Hwangae Provinces, the concerned county officials of cooperative farm management coordination committees (CCFMCs) and of the Central Bank (CB) branches accompanied the mission.

3. The mission visited 13 Cooperative Farms (CF)s, six in Ryanggang Province and seven in North Hwangae Province. Ten of the visited CFs had full project support, one only partial and two no project support. A total of 38 household interviews were conducted, 32 of which with households receiving project credit and six without credit. The mission was allowed to independently choose the CFs³ and the households for the conduction of interviews. This provided a good opportunity for the triangulation of otherwise available information and the discovery of additional aspects. The household interviews served also to encourage the members to make drawings on the changes in their lives and work over the last five years and on their outlook for the future. A selection of these drawings is shown in this report in Appendix 12. In this way, the project beneficiaries had an occasion to visually express change according to impact domains as perceived by them.

4. Data availability at the onset of the mission was variable. On the positive side, a comprehensive database of the 37 CFs with full project support provided interesting insight into population, land, crops including yields, income by sources, expenditures by destination and net incomes per household

¹ IFAD, Office of Evaluation, Evaluation Manual, Key Methodological Guidelines and Processes, Draft, Rome, May 2008 and IFAD, Office of Evaluation, Evaluation Manual, Methodology and Processes, Rome, April 2009.

² The mission itinerary is provided in Appendix 1 to this report.

³ Although the list of CFs had to be communicated to the authorities long in advance and clearance was obtained only a few days before the mission's arrival in DPRK.

and farmer, from 2002 to 2007. An analogous set of data was provided, at the end of the mission, for the nine CFs with only partial project support, i.e. limited to credit and environmental protection. A sample baseline survey conducted with 144 households from the 37 CFs with full project support was available from the year 2000, with repeats in 2003 and 2007. These datasets can be considered as particularly valuable input, which is generally not forthcoming in many other development projects, despite its obvious usefulness for an evaluation.

5. However, access to other information was limited, perhaps understandably when considering that DPRK does not publish statistics in general, and economic poverty related statistics in particular. Station specific climatic data, agricultural research findings and extension messages are not in the public domain, but they obviously do exist. Comprehensive comparative data on the performance, inputs and outputs of non-project CFs were not accessible, which poses a serious problem of attribution of project effects. It was also difficult to obtain project related information on the credit component. To a certain extent, the mission was able to compile data in this respect that allow a reasonable assessment of this component according to the defined evaluation criteria. The most critical information gap of all was the lack of an up-to-date version of the Project Completion Report (PCR) and of the Project Progress Report 2007 at the time of the evaluation⁴. Thus, reliance on self-assessment, an important evaluation fundamental of OE, was problematic.

II. COUNTRY AND SECTOR BACKGROUND

6. **The country.** DPRK is a country of 122,762 square km, bordering the People's Republic of China, Russia and South Korea. DPRK has not published official statistics in the past 30 years.⁵ The few available data on its economy, health, nutrition and agricultural resources are almost always estimates made by research institutions abroad. Total population is estimated at 23 million people.

7. According to the most recent estimates (2004), the country had a Gross Domestic Product (GDP) per capita of US\$546, and the GDP had an annual growth of 4.15 per cent. The main trade partners are People's Republic of China and South Korea. Agriculture at large was estimated to account for 18.4 per cent of GDP, against 47.3 per cent for industry, 5.4 per cent for construction and 28.9 per cent for other sectors. Agriculture went through collectivisation in the mid 1950s, which brought about mechanisation, the systematic use of chemical inputs and a national irrigation network. Both cooperative farms and state farms were created during the same period.⁶ This doubled agricultural yields up to the mid 1980s. Agricultural productivity has since fallen, due to a variety of factors, such as overuse of chemical fertilisers and concurrent soil acidification, and widespread mono-cropping of staple crops, particularly on marginal soils. With the collapse of the Soviet Union in 1990, DPRK ceased to have privileged markets and access to cheap energy and other key inputs, which also affected the high input agriculture practised until then. In 1995-97 a series of droughts and flooding exacerbated the situation leading to widespread famine. The country had to rely on WFP food supplies for about 10 years until 2005 when it declared that no further emergency aid was needed but development assistance would be accepted.

8. Overall cropping area in DPRK is in the range of 1.5-2.2 million ha⁷. In the aftermath of the food crisis of 1995-97, some noticeable shifts occurred in the areas of major crops. Maize area decreased by 30 per cent in comparison to 1986, and rice and soybean areas both by 10 per cent. This was compensated by an increase of the potato area by a factor of 3.5. In terms of production, the years of 1995-97 left a visible trail in the statistics (Figure 1). The production slump, particularly for rice

⁴ The project Progress Report 2007 became available to the evaluation team on 26 June, and a revised draft PCR on 7 July 2008. Their findings have been taken into account whenever possible.

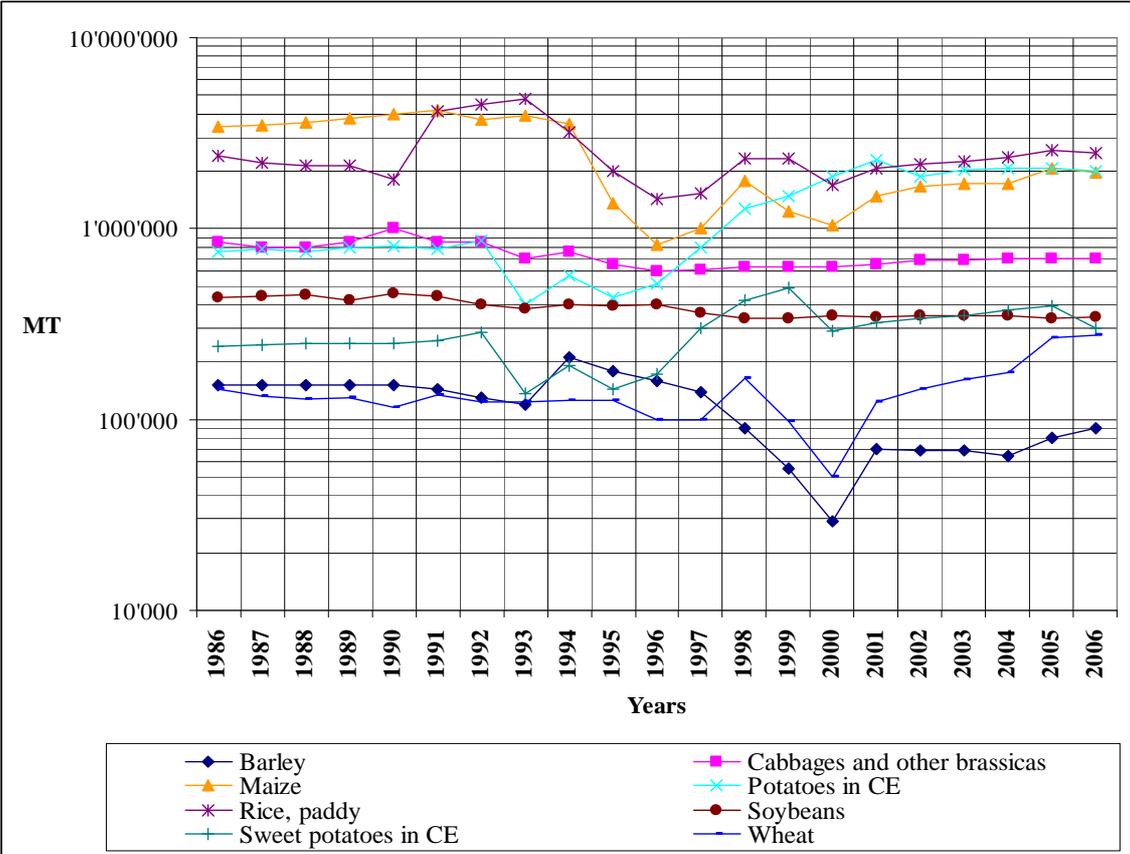
⁵ Most of the statistics presented in this report are drawn from the 2007 DPRK Country Profile of the Economist Intelligence Unit, which, in turn, draws from data produced by research centres in South Korea.

⁶ Recent figures suggest that around 3000 cooperative farms and 1000 state farms are in existence.

⁷ IFAD, Democratic Peoples' Republic of Korea, Upland Food Security Project, Appraisal Report, Report No. 1502-KP, Rome October 2000, page 1.

and maize, was dramatic. While rice production appears to have recovered to pre-crisis levels, maize production is substantially down. Potato and wheat production, on the other hand, have increased over and above the levels before the crisis.

Figure 1. Production of Major Crops, 1986-2006



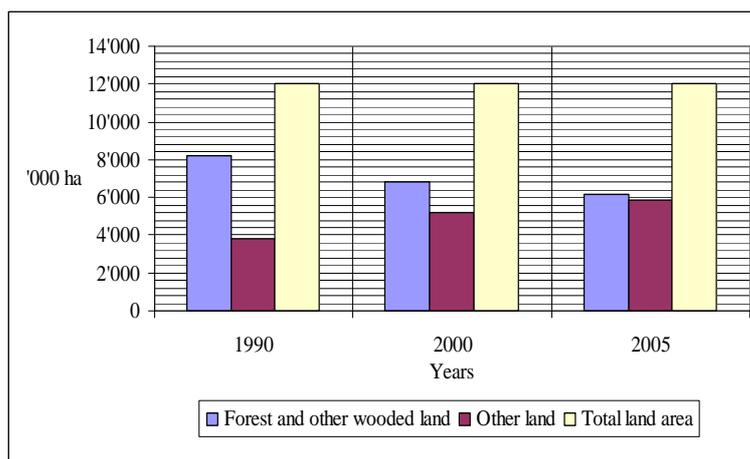
Note: Potato and sweet potato production figures are given in cereal equivalents (CE) whereby 1 MT of potatoes corresponds to 250 kg of CE.

Source: FAOSTAT 2008, www.fao.org/waicent/portal/statistics_en.asp

9. By definition, arable land is classified as land with slopes below 15 degrees, being under the purview of MoA. Land over 15 degrees of slope is under the authority of MoLEP. Over the last 15 years, 1 million ha of sloping land over 15 degrees has been cultivated by individuals from cities and the countryside in order to complement their requirements for food and feed. The annual output from these areas is estimated to cover about 10 per cent of the national food supply⁸. According to FAO, deforestation in DPRK between 1990 and 2005 has been 2 million ha or 25 per cent of the forest area of 8,201,000 ha in 1990. The deforested area is now accounted as other land (see Figure 2), and cultivated over large tracts (see photo page 27).

⁸ An estimate obtained from MoLEP, which is difficult to corroborate.

Figure 2. DPRK, Deforestation, 1990-2005



Source: FAOSTAT 2008, <http://www.fao.org/forestry/32185/en/prk>

10. There are no official estimates on the prevalence of poverty and malnutrition. A series of UNICEF surveys between 2002 and 2006 found an average stunting rate in the range of 40 per cent for children under the age of seven, still high but much lower than the 60 per cent stunting rate estimated in 1998⁹, three years after the onset of the food crisis. Chapter III on project impacts will refer to these data in more detail.

11. DPRK is neither a member of the World Bank nor of the Asian Development Bank. Therefore, IFAD is at the moment the only International Financial Institution lending to the country. Aid also comes from other United Nations (UN) agencies in the form of technical cooperation, FAO for example, or food relief via WFP and some few bilateral donors. In 2007, United Nations Development Programme (UNDP) operations in the country were suspended, following an allegation of misuse of funds.

12. **Evolving economic policy context.** In July 2002, the Government of DPRK operated an economic policy shift on many levels that was perceived as significant by various observers¹⁰. According to information received from the Project Management Unit (PMU), this policy change granted more autonomy to CFs in production planning, which tended to facilitate the implementation of the Uplands Food Security Project (UFSP), especially the actual introduction of new crop rotations. On a general economic level, the national currency (KPW) was devaluated about 70 times against the US\$, from the administered exchange rate of 2.16 to 150. Official wages increased in the range of twenty to forty times, and so did official agricultural input and product prices, but in varying degrees (forty times for ammonium sulphate, 56 times for urea, seventy times for maize and eighty times for potatoes)¹¹. While Frank (2005) concluded that these reforms, called “Improved Economic Management Measures” have boosted purchasing power for the people, this was not so for everybody. According to information obtained from Central Bank (CB), savings and loan deposits were not adjusted at all, thus meaning that holders of savings deposits and of cash were the big losers, and borrowers the lucky winners. In all appearance, the reforms provided the growing unofficial economy the Government’s conditional approval. However, in October 2005, the Government announced that the Public Distribution System would be fully reinstated, and outlawed the sale of grain on the markets, which however was subsequently not thoroughly enforced. Soon after, men were prohibited

⁹ Democratic Peoples’ Republic of Korea, Upland Food Security Project, Appraisal Report, Report No. 1502-KP, Rome October 2000, paragraph 34.

¹⁰ Ruediger Frank, Economic Reforms in North Korea (1998–2004): Systemic Restrictions, Quantitative Analysis, Ideological Background, University of Vienna, East Asian Institute, Vienna, Austria, Journal of the Asia Pacific Economy, Vol. 10, No. 3, 278–311, August 2005.

¹¹ Data compiled by the mission in various CFs and with CB, reflecting the situation in of April 2008.

from trading at markets, a ban that has recently been extended to women below the age of fifty¹². Today, county rural markets that are allowed once in ten days continue to exist, and Pyongyang has a market that functions daily. As there are no official statistics, annual inflation rates of goods traded in these markets are unknown. Various estimates from independent sources infer that these may have accelerated over the last year from 50 to 100 per cent for grains, due to the relatively bad harvest in 2007, corroborated by the PCR¹³. The WFP and other sources indicated that the PDS has frequently been disrupted since the end of 2007, although officials met by the mission did not confirm this.

13. **Agricultural policy.** Following the establishment of cooperatives in rural areas in the late 1940's and early 1950's, policies of electrification, mechanisation and intensive use of agricultural inputs were implemented. With reduced support from neighbouring socialist states and scarce availability of external inputs since the early 1990's, the national strategy and overriding philosophy of Juche has been revived with regard to agricultural policies. The centrepiece of the Juche philosophy is the conviction that mankind is the master of its own destiny. From this concept, the principle of self-reliance is explicitly derived. Greater emphasis is now placed on matching crops to soil characteristics, seasons and climatic conditions across the country. Focus has moved to improved seeds, intensifying production with double cropping, use of organic and bio-fertilisers, as well as bio-pesticides, that can be produced in the country. Mechanisation is still seen as an important priority as is the expansion of irrigated areas and reduced reliance on power for irrigation¹⁴. State-owned, centralised and provincial input supply schemes, as well as state agricultural marketing organizations that feed into the PDS or export channels are all part of DPRK's agricultural policy.

14. **Cooperative farms.** The official agricultural production apparatus exclusively relies on state farms and CFs. For the UFSP Interim Evaluation, it is important to understand the workings of a CF. They have both economic and social functions. The first priority is self-sufficiency, reflecting DPRK's Juche philosophy, and the second to meet the nationally defined targets for food grains and other agricultural commodities. The third priority is to comply with the social functions of a CF, providing shelter, basic infrastructure, education and health care. The ability to cater for these functions was seriously compromised at the time of project design and appraisal and this provided the main rationale for the IFAD loan to DPRK¹⁵. Structurally, CFs are organized as shown in Figure 3. They implement annual production plans approved by the higher echelons of the MoA hierarchy at county, provincial and national level. CFs partly finance their input costs from a common fund set aside each year and sell their crop and livestock produce to the established MoA marketing channels. The main income sources of CFs are crops and livestock. Net income is distributed to the CF members on the basis of work points earned during the year. These work points are captured at sub-work team level as shown in Figure 3.

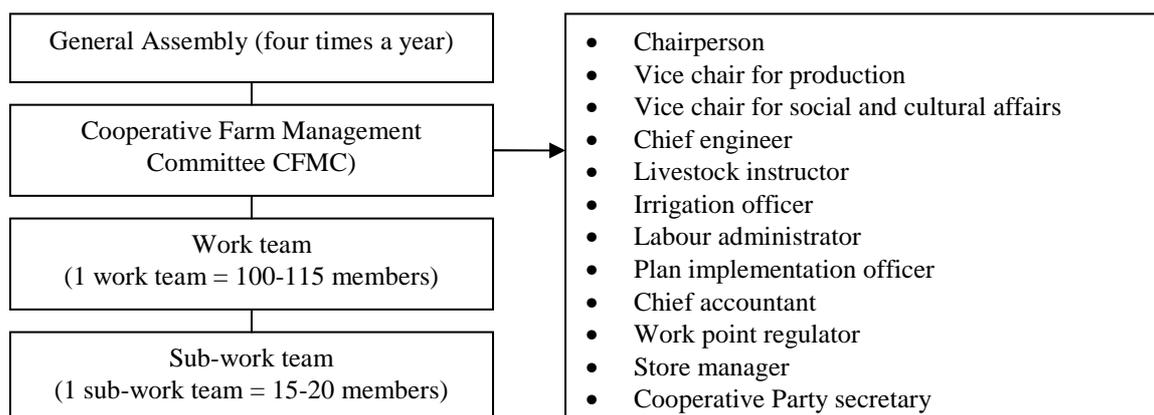
¹² Andrei Lankov, *Staying Alive, Why North Korea Will Not Change*, Foreign Affairs, Volume 87, Number 2, March/April 2008.

¹³ IFAD, DPR Korea, Upland Food Security Project, Project Completion Report (PCR), Draft, Rome, July 2008, Annex V, Page 36.

¹⁴ Agricultural Policy Document provided in translation by PMU on 1 May 2008.

¹⁵ Ibidem and IFAD, Democratic Peoples' Republic of Korea, Upland Food Security Project, Appraisal Report, Report No. 1502-KP, Rome October 2000, paragraphs 34-36.

Figure 3. Typical Cooperative Farm Organisation



III. PROJECT BACKGROUND

15. **IFAD interventions in the country.** Since the beginning of its operations in 1995, which coincides with the onset of the large food crisis, IFAD has financed three projects in DPRK for a total loan amount of US\$69 million. The Sericulture Development Project ran from 1996 to 2002 and the Crop and Livestock Rehabilitation Project (CLRP) from 1997 to 2003.

16. A Country Strategic Opportunities Paper (COSOP)¹⁶ was produced in 2000. According to this document, IFAD operations should concentrate on reviving production in the disadvantaged uplands with focus on specific geographic areas, CFs and eventually households within the cooperatives. In particular, the COSOP thrust was towards supporting household-level income generating capacity. The COSOP considered the promotion of sustainable agriculture as essential, by encouraging crop rotation instead of mono-cropping, and crop diversification.

17. The COSOP emphasised partnership with other external donors and actors, including multilateral, bilateral and NGOs. It also stressed the importance for IFAD of engaging in policy dialogue activities beyond the limits of individual projects, entailing activities both in international fora and within DPRK. One of the key ambitions of the COSOP was to set an example of successful international lending to DPRK, in order to encourage other IFIs to consider future operations in the country. From an operational point of view, two projects were envisaged: (i) a project focusing on improved farming practices and income-generating activities in the hills (which became the Uplands Food Security Project); and (ii) an artisanal fishery project. IFAD-Asia and the Pacific Division (PI) is now considering a follow-up phase to UFSP, mainly centred on the rural finance component, although the final decision will be taken at the conclusion of the Interim Evaluation.

18. The project area included 46 cooperative farms in four counties. Two of these counties, Samsu and Pungso, are in the far north of the country, in Ryanggang Province; while the other two, Singye and Goksan Counties, are located in the southeast of the capital in North Hwangae Province. Of the 46 cooperatives, nine were included only within the environmental and credit components, and 37 cooperatives were involved in all components (see Table 1).

19. Ryanggang Province borders China and is a hilly area (98 per cent classified as upland)¹⁷. Located around latitude 41°N, most of the farmland lies between 800-1,200 meters above sea level. Winters are especially severe, with temperatures reaching -20°C, and the crop-growing period is only

¹⁶ IFAD; Democratic Peoples' Republic of Korea, Country Strategic Opportunities Paper (COSOP), Report No. 1454-KP, Rome, November 2000.

¹⁷ IFAD, Democratic Peoples' Republic of Korea, Upland Food Security Project, Appraisal Report, Report No. 1502-KP, Rome October 2000, Annex 1, farm production systems.

about 130 days. Both farm size (average 565 hectares) and population density is lower than in the south of the country, although the steep nature of the terrain often contributes to high localised population density. Rainfall is highly variable, with 30 year average showing some 922 mm per year (1969-99), while rainfall in 2005 and 2006 was only 521 mm and 578 mm respectively¹⁸. Recent rainfall, during the life of the project, has tended to be low (600-700 mm)¹⁹.

20. Singye and Goksan Counties fall between latitudes 38 and 39 °N in the eastern upland part of North Hwangae Province. Upland agricultural land in these counties is generally between 300-500m meters above sea level, and constitutes 65-70 per cent of their total area. The lower latitude and altitudes of these counties (as compared with those in Ryanggang Province) allow a longer crop-growing season of up to 180 days. Double cropping is possible in parts, but only on about 20 per cent of area of project cooperatives (called the irrigated area)²⁰. Farm size is on average some 818 hectares and farm population tends also to be higher than in the Northern provinces. Rainfall is as variable as in Ryanggang, but tends to be higher than in the north, with 1,062 mm and 798 mm in 2005 and 2006 respectively²¹.

21. Rice accounts for about 20 per cent of the cropped area in Singye and Goksan Counties of North Hwangae Province, but only for some 2 per cent in Samsu and Pungso Counties in Ryanggang Province. Potatoes are a major crop in the north, with maize important in all locations and smaller areas of barley and wheat. Soybean and sweet potatoes are growing in importance in all areas and a large number of other crops are grown in small quantities (i.e. buck wheat, sesame and oats). Livestock plays an increasingly important role both at the CF and household level, providing additional income from meat, animal traction and manure.

22. **Project design features.** The UFSP was approved by the Executive Board of IFAD in December 2000. It became effective in April 2001 and will close in June 2008 after two extensions, with the original closing set for December 2006²². The total estimated cost at appraisal was US\$41.77 million of which US\$24.44 million from IFAD loans, US\$4.44 million from the DPRK Government, US\$7.18 million from the co-financiers mentioned below and US\$5.71 million from beneficiaries. According to the Appraisal Report²³ and the President's Report and Recommendation²⁴, external co-funding was to be provided by UNDP, WFP, FAO, and the Italian Government (through the Cooperazione e Sviluppo Italiana (CESVI), an Italian non-governmental organization²⁵. The project was supervised by UNOPS as this was the case for all the IFAD projects in DPRK, although the last supervision mission in 2007 was conducted directly by IFAD.

23. The project goal as given in the logical framework of the Appraisal Report was to achieve "Balanced, sustainable and replicable cropping systems and environment management, which improve soil fertility and enable higher and more secure production to lead to improved living standards for 18,000 low-income households on 46 cooperative farms in upland areas". The project was given seven specific objectives corresponding to the project's seven components as presented in Table 1 below. The table also presents the original weight given to each component in the project baseline cost.

¹⁸ Figures from Hyesan station.

¹⁹ Discussions with the respective County Cooperative Farm Management Committees (CCFMCs).

²⁰ PMU, 2007, UFSP Draft Project Completion Report.

²¹ Figures from Pyongyang station.

²² The latest extension has been approved by IFAD under the expectation that the project would adopt financial reporting standards and communication facilities acceptable to international agencies.

²³ IFAD, Democratic Peoples' Republic of Korea, Upland Food Security Project, Appraisal Report, Report No. 1502-KP, Rome October 2000.

²⁴ IFAD, Report and Recommendation of the President to the Executive Board on a Proposed Loan to the Democratic People's Republic of Korea for the Uplands Food Security Project, Executive Board – Seventy-First Session, Rome, 6-7 December 2000.

²⁵ Only a small part of the co-financing was actually made available.

Table 1. Project Components and Specific Objectives

Component	Specific Objective	Intervention Strategy	Per Cent of Base Cost	Implementation Partners
1. Sustainable crop production systems	Objective 1: Improved crop rotations, farming practices and soil fertility, generating increased yield, income and labour productivity.	Assist CFs in introducing sound crop combinations and sustainable farming systems, providing models for demonstration to other CFs	55.7	CCFMC ^a , NAAS ^b , CESVI
2. Potato seed supply development	Objective 2: Greater availability to cooperative farms of high quality and disease free potato seed.	Assist the Potato Research Institute and the participating counties' tissue culture centres; Provide support to multiply the expanded seed volumes	2.6	CCFMC, NAAS, Potato Research Institute, FAO
3. Environment preservation	Objective 3: Improved micro-catchment planning, fuel wood plantations and erosion control measures preserving and enhancing the environment.	Support tree planting, bunding, rudimentary terracing and the construction of storm drains	30.1	MoLEP, CCFMC, FDRC, WFP
4. Household and cooperative credit	Objective 4: Credit services encouraging and enabling livestock and other enterprises by cooperatives and their farmer members.	Provide additional institutional credit to finance investment in income-generating production activities, mainly livestock	3.6	CB; CB county branches
5. Community facilities and services	Objective 5: Capacity of cooperative communities to select and undertake productive projects.	Establish a fund to stimulate the process of participatory planning and investment at the farm level	2.5	CCFMC
6. Farm output processing	Objective 6: Improved processing capacity adding value to crop production at cooperative farms.	Help the cooperatives to investigate and develop opportunities for processing farm products	1.6	CCFMC
7. Project implementation support	Objective 7: Technical and managerial capacity of national, provincial and county agencies and cooperatives to plan and implement projects.	Provide support to PMU, PREC ^c and CCFMCs in carrying out their roles.	4.0	PMU, PREC, CCFMCs

^a County Cooperative Farm Management Committees, ^b National Academy for Agricultural Sciences,

^c Provincial Rural Economy Committees

Source: Appraisal Report

24. **Project design process.** The USFP design process started with an Inception Report (not available to the mission) that guided the formulation mission fielded in April-May 2000. The formulation report was reviewed internally by a Technical Review Committee (TRC)²⁶ and the Operational Strategy and Policy Guidance Committee (OSC)²⁷ early August and the appraisal mission was fielded during in the last two weeks of that same month. The itineraries of both the formulation and appraisal missions indicate that most time was spent in Pyongyang meeting with Government agencies, and very limited time meeting with international development partners or visiting CFs to interview intended project beneficiaries and observe living conditions and farming practices. Also, access to written information on population, the economy, agricultural and animal husbandry practices, agricultural research, health, nutrition and education in the rural areas was (and remains)

²⁶ IFAD, DPR Korea, Upland Food Security Project, TRC Issues Paper, Rome, 4 August 2000.

²⁷ IFAD, OSC Minutes, DPR Korea, Upland Food Security Project, 8 August 2000.

very problematic because of the Government's reluctance to divulge data. This lack of discussion with stakeholders and limited information had important consequences on the soundness of some technical orientations in project design and the solidity of partnership arrangements at project start-up.

25. Between the formulation and the appraisal reports, and upon the recommendations of both the TRC and OSC, the following important shifts occurred: (i) the logical framework of the project was strengthened, especially in terms of clarity, quantifiable indicators and comprehensive assumptions on external factors; (ii) the need for technical assistance was confirmed, but packaged into a series of short-term assignments; (iii) the hitherto undefined co-financiers were specified, encompassing a relatively high number of small and heterogeneous contributors at appraisal, but with a lower total participation to project funding as compared to the formulation report; (vi) intended changes in land use were clarified to some extent; and (v) gender considerations were made more explicit, especially in the design of the household surveys of 2000, 2003 and 2007. Due to financial constraints, the original number of CFs to be supported was revised from 45 in total to 37 with full project support and nine with only partial project support.

26. **Changes introduced after MTR.** Some changes in the allocation of funds were made after the 2004 Mid-Term Review (MTR), which recommended that: (i) Further farm management training should be provided, but CFs should determine their own crop rotation system, together with the CCFMCs, as opposed to receive directions from the PMU; (ii) An applied research and trials programme should focus on bio-fertilisers and conservation farming, and be implemented by NAAS and the CFs; (iii) Systematic input supply should be terminated and remaining funds should be used to establish an Emergency and Public Works Fund, from which public works could be financed in years of low crop yields or inputs supplied in critical shortage situations; and (iv) formerly unallocated resources should be allocated to the credit component for individual households and CFs. An amendment to the Loan Agreement was signed in April 2005, in which IFAD and the MoA agreed to: (i) allocate the formerly unallocated amount of Special Drawing Rights (SDR) 1,4 million (US\$2 million) to the credit component, split evenly over the household and CF credit lines; (ii) extend the project completion date by one year to June 2007; and (iii) create a new expenditure category for an Emergency and Public Works Fund (SDR 4,33 million, mostly re-allocated from Component 1). A second extension to the project was agreed following the supervision mission of 2007, to allow the project to: (i) internationally procure farming supplies with the remainder of the Emergency and Public Works Fund (for US\$1.5 million approximately) to be sold to CFs, the revenue of which would be allocated to the household credit revolving fund with CB²⁸; (ii) benefit from technical assistance in financial management; and (iii) bring its financial records up to standard. The final supervision mission in May-June 2008 recommended upon request by the Government that unspent loan proceeds, again mainly from the Emergency and Public Works Fund, would be used to further increase the revolving fund of the household credit component (by US\$2.23 million), to import farm machinery spare parts (US\$45,000), and to cover the cost of the international technical assistance in financial management (US\$11,614), which had not yet taken place.

IV. IMPLEMENTATION RESULTS

27. This section summarises project implementation per component and captures the outputs achieved with reference to the logical framework of the Appraisal Report. The attainment of projects objectives will be analysed in Section C below under effectiveness.

28. **Sustainable crop production systems (61.1 per cent of project cost at completion).** The main driver of this component was the introduction of new crop rotations. The proposed changes to the crop rotations were as presented in Table 2 below. Annual cropping intensity was planned to be 200 per cent in North Hwangae and 100 per cent in Ryanggang. Support to the 37 participating CFs to implement these new rotations included: (i) the supply of annual crop inputs; (ii) the provision of

²⁸ Office Memorandum of 19 October 2007 to Mr. Kevin Cleaver, Assistant-President Programme Management Department (PMD), through Mr. Thomas Elhaut, Director PI, from Mr. Nicola Favia, CPM, regarding: DPRK: Uplands Food Security Project (UFSP) - IFAD Loan 553-KP – Extension of Closing Dates by 12 months – Reallocation of Funds by Category.

mechanisation packages; (iii) the expansion of potato and input storage capacity; (iv) strengthening of management capacity, (v) potato seed supply (within component 2); and (vi) technical assistance (within the project implementation component).

Table 2. Proposed Changes in Crop Rotation

Lowland paddy	Continuation of present rotational practices, but restriction of area of potato to 10 per cent and addition of green manure, or fodder crop to be planted after harvest of paddy, to be ploughed in, or used as winter feed for livestock.
Class I upland soil	Three-year rotation comprising maize; winter/spring barley; winter/spring wheat; potatoes and soybean. Vegetables could be double, or intercropped with any of the main crops.
Class II upland soil	Similar three-year rotation to class I soils, with addition of one in three year winter break crop of green manure, or winter fodder.
Class III upland soil	Three-year rotation, similar to Class I, but excluding potato. In addition an annual legume would be included for addition as a green manure.

Source: Appraisal Report

29. The annual crop inputs (fertilizers and agrochemicals) were estimated at appraisal to absorb more than US\$11.7 million or 30 per cent of total project cost, with shares of urea, phosphate fertilizer, potassium fertilizer and pesticides as indicated in Table 3 below. Cumulatively, the project has procured 10,950 Metric Ton (MT) of urea, 9,065 MT of compound Nitrogen (N) Phosphorus (P) Potassium (K) fertilizer and 366 MT of pesticides. The overshooting of the urea quota set at appraisal and the replacement of single super phosphate and potassium chloride by 21-17-17 NPK compound fertilizer have shifted the balance significantly towards N, to the detriment of P and K supply. The reasons of this significant shift are not known²⁹, but the omission of use of super phosphate is of concern because of the tendency for low P as well as K in soils³⁰ and because the super phosphate would also have had a positive impact on soil pH.

Table 3. Planned vs. Procured Fertiliser

Fertiliser Type and Pesticides	Amount (MT)	Total N (MT)	Total P (MT)	Total K (MT)
Planned at appraisal				
Urea	3,149	1,449		
Super phosphate	14,561		2,330	
Potassium	6,607			3,304
Pesticides	345			
Total planned	24,662	1,449	2,330	3,304
Procured				
Urea	10,950	5,037		
NPK 21-17-17 ^a	9,065	1,904	324	1,541
Pesticides	366			
Total procured	20,381	6,941	324	1,541
Difference between procured and planned		5,492	-2,006	-1,762
Difference as percentage of procured against planned		479 per cent	-86 per cent	-53 per cent

^a The highest NPK combination is used in these calculations, although different combinations were used in different years (18:18:18 in 2001 and 15:15:15 in 2002).

Source: PMU

30. There is no evidence that the incremental fertilizer input from the project was targeted, as originally intended, to the 18,000 ha of best soils of the 37 CFs selected for full project support. It is more likely, as hinted at by the CCFMC Chairpersons, that the additional injection of annual farm inputs by the project has helped the project counties to increase their degrees of freedom in input

²⁹ Discussions with CF Managers and CCFMC Chairpersons however infer that nitrogen fertilizers are given preference because of fast crop yield response, despite the downsides highlighted in Appendix 8.

³⁰ Data was collected from five farms in North Hwangae on P and K status of soils, covering some 2,835 hectares. Summary of this data shows phosphorus (P) content to be medium in 39 per cent and low in 43 per cent of soils. For potassium (K) figures are 27 per cent of land with medium and 46 per cent with low content.

allocation to all CFs in the respective county. To date, the project has spent US\$6 million for the purchase of crop inputs, and purchases are on record only for the years 2001-2005. The MTR considered that there was no reason to continue to use scarce project resources for this purpose as farm inputs have not been incremental and simply replaced inputs obtained before the project by farms from other sources³¹. In hindsight and assessed on the basis of the database of the 37 CFs with full and the nine CFs with partial project support, the mission is inclined to believe that the 37 CFs with full support, i.e. benefiting from the inputs purchased by the project, did indeed get a bigger share of fertilizers, which contributed to higher yields.

31. The provision of farm machinery was the second most cost-intensive item under the sustainable crop production systems component. Table 4 below details the items procured and their distribution over the 37 CFs with full project support. The planned tractors and equipment items were successfully obtained by the 37 collaborating cooperatives between 2002 and 2004 for the most part.

Table 4. Planned vs. Procured Farm Machinery

Items	North Hwangae, CFs with an average cultivatable area of 818 ha		Ryanggang, CFs with an average cultivatable area of 565 ha	
	Planned at appraisal; 25 CFs	Machinery received; 18 CFs	Planned at appraisal; 20 CFs	Machinery received; 19 CFs
Tractor, 85 HP 4wd	3	2 (80 HP, some 60 HP)	2	½ (80 HP, some 60 HP)
Plough, 4 furrow reversible	2	2	2	2
Potato planter, two row	2	2	2	2
Corn drill	1	1	1	1
Sprayer,	2	1/2	2	1/2
Fertiliser spreader	2	1	2	1
Trailer, 8t, tipping	3	2	2	2
Potato harvester	2	2	2	2
Potato planter	-	2	-	2
Cereal planter	-	2	-	1
Cereal harvester	-	1	-	1
Truck	-	0/1	-	0/1
Diesel generators	-	0-2	-	0-2
Grain thresher	-	0-2	-	0-2

Source: PMU

32. In all visited CFs, the mission was in a position to appreciate the existence and state of operation of the project farm machinery. While the tractors are highly useful, spare parts are not readily available in-country and have to be imported, requiring foreign exchange. These problems are also experienced with tyres and spare parts for the tools. County chairpersons identified as most pressing concerns the further increase in traction capacity and adequately equipped workshops for maintenance of existing tractor fleets and machines. As Table 4 shows, the array of farm machinery was extended during project implementation to include single row potato planters, trucks, diesel generators and threshers. Discussions with the CF management and the CCFMC chairpersons indicate that these additional items appear to respond to perceived needs.

³¹ IFAD, DPKR-UFSP, Mid-Term Review cum Supervision Report, Report No. 1741-KP, Rome, September 2004, Page 11.



Chinese 80 HP Tractor ploughing at Naepo CF Ryanggang Province

Source: Ernst Schaltegger

33. The plan to extend potato storage capacity, an explicit item of the sustainable crop production systems component, was found unnecessary because of state purchase of production at harvest. Some additional storage for seed potatoes was required, and implemented where necessary, in the visited CFs of Ryanggang Province where the production of seed potatoes is possible for climatic reasons.

34. Farm management support was another element of the sustainable crop production systems component. It was provided through training, coaching and study tours for CCFMCs and CFs. According to the Project Management Unit (PMU), it was marred during the first project half by the lack of involvement of cooperative staff, farm workers and national scientists. The draft PCR attributes this deficiency also to the design stage of the project³². The overly prescriptive and inappropriate rotational plans proposed by the project during the first project years led to an understandable mistrust of other technical suggestions and outside technical support. This impacted further on the uptake of planned technical assistance (see paragraph 51 below), which in turn affected the quality of procurement and reduced support to implementation. Study tours were conducted to China and Italy.

35. Support for upgrading and re-equipment of NAAS soil analysis laboratories in the two provinces was provided, and this permitted that such analyses were conducted on all farms in the four counties, every three years.

36. In practice, on-farm research is actively being undertaken in all project-supported farms, assisted by NAAS regional scientists. Such collaboration was discussed during project appraisal; however there is no specific component, nor funding, within the final design³³. This may help explaining why the PMU has no access to on-farm research results, in addition to the fact that such results are usually not in the public domain. Research includes varietal selection, improved cultivation methods, optimal fertiliser application, intercropping, seed storage, pest and disease control through early warning systems and use of chemical and biological agents. Data is apparently collected at county level; however these were not made available, neither locally nor at the central NAAS station, nor with the PMU. The trials appear well targeted and suggest that there are links between trial findings and cooperative practice. For example, trials with Hukbosan³⁴ in the early 2000's have apparently shaped national policy, and cooperatives are now recommended to apply it to all crops.

³² PMU, 2007, UFSP Project Completion Report.

³³ Appraisal Report and discussions with the Director of Soil Research Institute, NAAS.

³⁴ Hukbosan is a term used to encompass a range of organic matter combinations including peat and farm yard manure mixed with urea and other additives, which is fermented to produce a soil tonic and humic addition that

37. **Potato seed supply development (2.6 per cent of project cost at completion).** This component addressed the lack of high quality and virus-free potato seed in the project area. The project has provided inputs and equipment to the Potato Research Institute at Daehongdan in Ryanggang Province and supported renovation and equipment for four county level potato tissue culture factories, where potato foundation seed is multiplied in-vitro in greenhouse multiplication units. The project also supported field level propagation of potato seeds in 37 CFs. Specialists from the NAAS were actively involved in implementation.

38. **Environment preservation (14.3 per cent of project cost at completion).** This component addressed the two issues of: (i) provision of fuel wood; and (ii) the stabilisation of slopes threatened by erosion. In March 2008, total forested area amounted to 5,500 ha in the 46 involved CFs (details in Appendix 4) against a target of 5,400 ha³⁵, with the project helping take forward the MoLEP policy of allocation of previously state owned land to cooperatives to meet their fuel and wood requirements on a sustainable basis. Size of allocated area is based on the provision of some 0.3 hectares per household. In some cases, the allocated land was already afforested in part and cooperatives visited were replanting between 5 and 20 hectares a year, with species selection³⁶ tailored to meet their specific cooperative needs. Some woodlots provide not only fuel wood, but also timber for agricultural implements and construction materials. While this provision was adequate for the majority of CFs visited, some indicated that further areas would need to be assigned in order to meet all needs, due to additional requirements linked to processing and expansion of CF members as some CFs are growing in members, for example Jungpyong at 3 per cent a year. Appendix 4 provides details on the distribution of these areas whereby the nine CFs with only partial support are highlighted. Simple nursery areas have been established in all 46 participating CFs to supply saplings for forestation. Seedlings of pine and larch are collected from the wild, as well as grown in the nurseries, and the project has supported these nurseries with provision of basic tools and equipments. In terms of vulnerable land protection, MoLEP reports having undertaken bunding, terracing and construction of storm drains for the protection of 1,200 ha of land.

39. MoLEP has undertaken initiatives despite the lack of financial support from the project as only some 4% of the substantial funding from the World Food Programme (WFP) earmarked at appraisal (US\$6 million) actually materialised. This failure to comply is referred to in Chapter V on performance of partners. Capacity has been recently enhanced in the Ministry through training and activities undertaken within joint projects with other organisations such as Swiss Development Cooperation (SDC), German Agro Action and Concern. All these organisations have initiatives targeting improved sloping land management.

40. **Household and cooperative credit (15.6 per cent of project cost at completion).** According to the Appraisal Report, the large unfilled gap between supply and demand for institutional credit suppressed investments by both households and CFs and reduced income in the project area³⁷. To address this shortage, two credit lines were devised, i.e. a household and a CF credit line, plus a technical and material support to CB. The household credits were targeted to 17,915 households at appraisal while all 46 participating CFs were recipients of their respective credit line. Both lines were intended to fund small livestock activities, i.e. the purchase and raising of young stock by the CFs and rearing and/or fattening by the households. The interest rate for both types of borrowers was set at 5 per cent and remained unchanged over project life.

has reportedly longer-lasting and greater impact than similar quantities of farm yard manure. Publications on the exact nature of Hukbosan are presently not in the public domain, as confirmed by NAAS.

³⁵ Figures provided by MoLEP and included in the Draft PCR, 2007.

³⁶ The main species propagated are grey birch (*Betula populifolia*), larch (*Larix leptalepis* and *Larix euvallepis*) false acacia (*Robinia pseudoacacia*) and pine (*Pinus rigi taeda*), thus adapted to the local ecology of Manchurian Forests. False acacia is widely used at lower altitudes for fuelwood production and managed by coppicing.

³⁷ IFAD, Democratic Peoples' Republic of Korea, Upland Food Security Project, Appraisal Report, Report No. 1502-KP, Rome October 2000, paragraph 69.

41. The banking system of DPRK is a state bank system. All transactions in local currency are handled by the CB and its branches, which is as well the monetary and regulatory agency, guiding and supervising the operations of the few other state banks. CB provides corporate and retail banking facilities to the public, state enterprises and cooperative farms. The visited farms all had outstanding loans with CB between 1.5 and 3 million KPW with interest rates between 1.8 per cent and 2.5 per cent. Private households have very limited access to credit accounts. Saving is promoted by the Government, and savings accounts are offered to everyone in three different forms, day, time and lottery deposits, of which the latter represent 80 per cent of all forms of savings. The interest rates on these deposits range from 5 per cent to 9 per cent. All other banks are admitted to handle only foreign currency. Foreign banks are not present in DPRK.

42. The credit component of UFSP is quite different from a standard rural credit in other countries as it does not clearly differentiate between lender and borrower. The CF, as the guarantor of the household livestock credit, and even as the borrower of its own credit, administers the complete approval and recovery process. The CB branches in the counties do not assess the applicants and have no loan contract copies on file. In the end, it is always the cooperative farm that collects loan repayments from the member households and pays back the loan to CB. The observed zero default rates are an expression of social control by CFs over individual borrowers, which finally guarantees the performance of the project credit scheme. From the lender's point of view, credit risk is close to zero. Appendix 5 highlights the key differences between the household credit provided by the UFSP and a typical rural household credit scheme.

43. Table 5 permits comparison between the original amounts allocated to the household and CF credit lines and support to CB (office equipment, vehicles, training etc.), the estimated effective amounts disbursed as per December 2007 and the estimated effective amounts disbursed at project completion (30 June 2008).

Table 5. Household and CF Credit Lines and Support to CB

Item	Original allocation as per appraisal		Effective disbursements as per 31 December 2007		Effective disbursement at project completion 30 June 2008	
	US\$	KPW	US\$	KPW	US\$	KPW
Household credit	1,083,796	2,341,000	2,092,019	158,543,400	3,320,288	342,783,821
CF credit	216,000	466,560	1,225,963	156,845,200	2,230,911	307,587,367
Support to CB	134,404	290,312	Approx. 258,019 ^c	Approx. 23,444,596 ^d	Approx. 254,801 ^f	Approx. 23,152,263 ^d
Total	1,434,200	3,097,872	Approx. 3,576,000 ^a	Approx. 338,833,195 ^e	Approx. 5,806,000 ^b	Approx. 673,523,451 ^e

^a Draft 2007 PCR estimate; ^b Draft 2008 PCR estimate; ^c Total minus CF and Household credit disbursements; ^d Estimate supposing 40% disbursement before mid-2002 devaluation; ^e Sum of Household and CF credit and support to CB disbursements; ^f The amount has decreased relative to the end-2007 estimate, probably due to inaccuracy of the financial data provided to the IFAD supervision missions of 2007 and 2008 which drafted the two draft versions of the PCR.

Source: Appraisal Report, IFAD Loans and Grants System and draft 2007 and 2008 PCRs

44. The main objective of the household credit sub-component at appraisal was to provide credits for 17,915 households with a loan portfolio of 2,341,000 KPW, corresponding to US\$1,083,796 in 2000. At the end of 2007, the revolving fund had 17,443 loans outstanding with a total loan book of 173,258,000 KPW or US\$1,155,053 at the exchange rate of 150 KPW to 1US\$. The average loan amount of 9,736 KPW highlights that nearly all household presently being borrowers have received the maximum amount of 10,000 KPW. The household credits were renewed on an annual basis, and have theoretically been through seven cycles, with a total of 47,671 loans underwritten. In practice, the quotient between the total loans underwritten and the number of outstanding loans at the end of 2007 (see above) amounts to 2.73, thus inferring that the extension of household credits grew progressively. The household credit sub-component has generated re-lending to the tune of 179 million KPW.

45. The CFs had been assigned a loan portfolio at appraisal of US\$216,000 corresponding to 466,560 KPW in 2000. At the end of 2007, and based upon the decision at MTR to increment the loan portfolio, the revolving fund had outstanding CF loans with all 46 CFs to the tune of 129,015,000 KPW or US\$860,100 in December 2007. The loans to CFs were extended on a three year basis, with the CF credit sub-component now entering into its third cycle. For the CF credit sub-component, the respective figures are 156.8 and 61 million KPW, respectively³⁸.

46. The mission reviewed all fund flows, from the Project Special Account to CB Head Office, the four CB county branches, the CFs and finally, in the case of household credits, the households. Table 6 indicates the total transfers from the CB main office to the CB branches, from 2001 to 2006 for both household and CF credits. The currency devaluation leap in KPW denomination is visible from 2003 onwards, as well as the pick up of transfers in favour of CF credits (Tables 7 and 8), in the wake of the loan amendment in 2005 following MTR (see paragraph 26). All tables below infer that Singye County received the largest share of funds, ranging from 33 per cent for CF credits to 46 per cent for household credits. This is roughly proportional to the population in this county, which corresponded, in 2002, to 49 per cent of the total households living in the 46 CFs supported by the credit component of the UFSP.

Table 6. Total Transfers to CB County Branches for Household and CF Credits up to 31 December 2007 (in 1,000 KPW)

	2001	2002	2003	2004	2005	2006	2007	Total
Singye	169.7	501.0	6,820		73,000	44,520		125,010.7
Goksan	165.8	502.0	2,701		49,500	33,460		86,328.8
Samsu	163.8	517.5	2,249		32,000	22,575		57,505.3
Pungso	125.8	518.0	955		25,500	19,445		46,543.8
Total	625.1	2,038.5	12,725		180,000	120,000		315,388.6

Source: Evaluation sheet from CB, 26 April 2008

Table 7. Transfers to CB County Branches for Household Credits up to 31 December 2007 (in 1,000 KPW)

	2001	2002	2003	2004	2005	2006	2007	Total
Singye	145.5	425.0	5,300		50,000	16,920		72,790.5
Goksan	140.8	425.0	1,371		30,000	10,060		41,996.8
Samsu	140.8	441.5	909		18,000	6,075		25,566.3
Pungso	107.8	442.0	195		13,000	4,445		18,189.8
Total	534.9	1,733.5	7,775		111,000	37,500		158,543.4

Source: CB Head Office, annual report sheet

Table 8. Transfers to CB County Branches for CF Credits up to 31 December 2007 (in 1,000 KPW)

	2001	2002	2003	2004	2005	2006	2007	Total
Singye	24.2	76	1,520		23,000	27,600		52,220.2
Goksan	25.0	77	1,330		19,500	23,400		44,332.0
Samsu	23.0	76	1,340		14,000	16,500		31,939.0
Pungso	18.0	76	760		12,500	15,000		28,354.0
Total	90.2	305	4,950		69,000	82,500		156,845.2

Source: CB Head Office, annual report sheet

47. The total loan portfolio closed by 31 December 2007 with the balance indicated in Table 10 below. This growth of 26,854,219 KPW corresponds to the capitalized interest from 2003 to 2007. The applied annual interest of 5 per cent did not cover transaction cost, in particular those borne by the CFs, which assume practically all labour intensive activities of credit administration. As the credit component is unique in the country and operating in an environment of administrated costs and prices,

³⁸ IFAD, DPR Korea, Upland Food Security Project, Project Completion Report (PCR), Draft, Rome, July 2008, paragraph 68.

it may not be surprising that the allocation of interest proceeds changed several times during project life. After the MTR, it was decided to capitalize the total of 5 per cent interest within the revolving fund, as shown in Table 9 below.

Table 9. Outstanding Balance of the Revolving Funds or Credit Lines up to 31 December 2007 (in KWP)

Household credits	173,258,000
CF credits	129,015,000
Liquidity	39,969,819
Revolving funds	342,242,819
Total disbursements from IFAD	315,388,600
- of which before devaluation of mid-2002	2,663,600
- of which after devaluation of mid-2002	312,725,000
Increment by interest capitalisation	26,854,219

Source: CB Head Office and evaluation mission

48. The transfers made before July 2002 are of key importance, because of the KPW-US\$ devaluation, from a rate of 2.16 to 150, coupled to a very significant artificial inflation of prices (see paragraph 12), decided by the Government of DPRK. By 1 July 2002, US\$1,227,749 had been withdrawn from the special account for the credit component and converted to 2,663,600 KPW at the exchange rate of 2.16 to the US\$. Because official prices were increased the value of the revolving fund, originally mainly destined to household credit plummeted. Because the household credit ceiling had to be adjusted from 116 KPW to 10,000 KPW, while, however, the revolving fund was not revalued (i.e. increased by a similar factor as the inflation rate), the potential number of beneficiaries was dramatically reduced. After MTR it was decided to transfer an additional US\$2 million to the credit lines, and, as such, between May-2005 and March 2006 both the household and CF credit lines were increased by approximately 150 million KPW (US\$1 million) each. This way, the number of beneficiaries as originally intended could be reached. Just before project completion, the Government of DPRK and IFAD agreed to allocate another US\$2.23 million of unspent project loan proceeds to the household credit component, bringing the component's share close to 16% of the total loan amount.

49. **Community Facilities and Services (3.6 per cent of project cost at completion).** This component was implemented from 2006 onwards only, the delay being caused by the absence of UNDP funding intended for an NGO to train CF managers and members in participatory planning tools, following a shift in UNDP's country strategy³⁹. Because of the Government's reluctance to finance international technical assistance (TA) out of loan proceeds⁴⁰, it was only when IFAD agreed to provide a grant in 2006 that the training could take place with the help of an international consultant and the component could successfully be implemented. The component established a fund to stimulate a process of participatory planning and investment at CF level. A methodology based on PRA was tested, and CF members were trained in four CFs of Singue and Goksan Counties⁴¹. The training activity consisted of three parts: (i) discussion of the PRA concepts, approaches and techniques; (ii) application of the learning through field practices; and (iii) a learning integration workshop. This intervention proved to be highly popular and successful. To date (31 April 2008), and against a target

³⁹ As per the President's report, the estimated UNDP contribution of US\$0.545 million to training, technical assistance and studies, was only secured for US\$ 0.2 million, the balance being "subject to the UNDP's resource availability position". UNDP provided US\$0.22 million during the first projects years for PMU office equipment, an overseas tour to Thailand to study sustainable farming and to Germany to study credit (four persons). UNDP also paid for a few international technical assistance missions (procurement and environmental planning, and whole farm planning).

⁴⁰ This despite the fact that an additional covenant of the Loan Agreement stated that in the event UNDP could not provide funding, the Borrower would request that the missing amount would be reallocated from Category IX "Unallocated" to Category V "Training and Studies".

⁴¹ Franklina Mantilla, IFAD consultant, DPRK, UFSP, Participatory Rural Appraisal (PRA) Report, April 2006.

of US\$0.993 million, US\$1.043 million have been used for the purchase of building materials such as cement, iron, wood and roofing material. 163 community facilities have been built and/or rehabilitated in the 37 CFs with full project support, ranging from cultural centres, kindergartens, clinics, bridges, and threshing sites, whereby close to one third of the prioritised facilities were study and class rooms for work teams. The details are presented in Appendix 6.

50. **Farm output processing (1.2 per cent of project cost at completion).** The Appraisal Report required the project to carry out feasibility studies covering all processing opportunities to add value to farm outputs. These feasibility studies were conducted with a long delay in May 2006, again because UNDP funding originally committed for those studies was not forthcoming. The studies were ultimately carried out with an IFAD grant. Starting in 2006, rice mills, oil presses, feed crushers, noodle makers and potato starch plants were procured, totalling 102 sets of machinery. US\$0.455 million have been used to install a variety of processing equipments. They include 21 rice mills, 29 oil presses, 22 feed crushers, 22 noodle makers and 4 potato starch plants, the latter all in Ryanggang Province, as detailed in Appendix 7.

51. **Project implementation support (1.6 per cent of project cost at completion).** The PMU managed the procurement of machinery, equipment and farming supplies, and assured their distribution through the established channels of MoA. In addition, the PMU was responsible for project coordination, training and M&E activities, and for convening the Project Steering Committee for monthly meetings. Nine short-term technical assistance consultancies were conducted over the life of the project, as presented in table 5. This was significantly less than planned, due to the co-financing from FAO, UNDP and CESVI not being tapped for these inputs and the above-mentioned reluctance of the Government to finance international TA from loan funds. Trainings on monitoring and evaluation (M&E), procurement, environmental planning, whole farm planning and project reporting were financed by UNDP. WFP financed TA on Food for Work project assistance planning and IFAD financed TA on participatory rural appraisal (PRA) and agro-processing. Only the very last TA mission, on Financial Management, was financed from the IFAD loan. Potential benefits from TA to the project were undermined by a lack of consultation with the PMU over the terms of reference, and outside experts not being teamed-up with national colleagues to ensure local appropriateness of recommendations and mutual learning. This corroborates the above paragraph 34 inferring that both project design and implementation have been negatively affected by weak collaboration with stakeholders, national scientists and farm managers in particular. It should also be noted that the training in financial management held after project completion, could have improved the PMU's financial management performance significantly if the training was offered earlier on. As such, it will only be possible to assert the training's effectiveness if and when a new project is managed by the trainees.⁴²

Table 10. Technical Assistance Received by the Project

M&E Inception Mission	March –April 2001	Mr. Arjen Sterk
Procurement & Environmental Planning	18 Sept. 9 – Oct. 2001	Mr. Paul Beverstock
Preparation of Whole Farm Plans	12 – 30 Oct. 2001	Mr. Swithun Goodbody
Format, Progress, Financial & Audit Reports	January 2002	Mr. Arjen Sterk
Preparation of Whole Farm Plans	Mid Oct – Nov. 2002	Mr. Scott Robert
WFP FFW Project Assistance Planning	1 – 15 Feb. 2003	Mr. Ralph van Gelder
PRA Workshop	7 – 21 March 2006	Ms. Franklina Mantilia
Agro-processing	19 - 29 .May 2006	Prof. Li Zaigui
Financial Management	13 July – 13 August 2008	Mr. Chung Jin Kim

Source: Draft 2008 PCR

52. While the PMU was successful in conducting and processing the household sample surveys and establishing the CF database of the 37 CFs with full project support, it had considerable difficulty to

⁴² Chung Jin Kim, 2008, Financial Management Training Report, 13 July to 13 August 2008.

obtain relevant and comprehensive project information from the partner institutions, especially the CB. This has made the task of the evaluation mission particularly challenging. The component also supported the Provincial Rural Economy Committees (PREC) and CCFMCs with office equipment and vehicles. It organized training, workshops and study tours abroad (Thailand, Germany, China) for staff of the PMU, CCFMCs and CB. Finally, the component financed the monitoring of children's health and nutrition status carried out by the Ministry of Public Health. Unfortunately, the Ministry of Public Health has so far not been forthcoming in publishing the data obtained, because the respective funding arrangement did not explicitly commit the Ministry to do so.

53. **Financial progress.** At completion (30 June 2008), the project disbursed approximately US\$37.2 million, which corresponds to 89 per cent of its programmed budget at appraisal. Disbursements per component are presented in Table 11 below. The project disbursed significantly less than foreseen on: (i) the environment preservation component, mainly due to difficulties with mobilizing WFP funds (as discussed in Chapter V); (ii) the farm output processing component, mostly in favour of the community facilities and services component; and (iii) the project implementation support component, due to lesser reliance on technical assistance than expected, in part attributable to difficulties in mobilizing co-financier commitments (FAO, UNDP and CESVI). Following the recommendations made by the MTR, loan funds were reallocated to the household and cooperative credit component (US\$2 million). At the very end of the project, an additional US\$2.3 million were reallocated to this component, which explains the over-spending of 290 per cent on this component.

Table 11. Project Financial Progress by Component

Component	Appraisal targets (US\$1000)	Actual as per 31 December 2007 (US\$1000)	Difference (per cent)
1. Sustainable crop production systems	23,284	22,735	-2.4
2. Potato seed supply development	1,072	949	-11.5
3. Environment preservation.	12,564	5,325	-57.6
4. Household and cooperative credit	1,489	5,806	+289.9
5. Community facilities and services	1,053	1,351	+28.3
6. Farm output processing	659	455	-31
7. Project implementation support	1,652	590	-64.3
Totals	41,773	37,211	-10.9

Source : Draft 2008 PCR, Annex IV

V. PROJECT PERFORMANCE

54. **Relevance.** It is fair to say that the project design was consistent with the agricultural and rural development policy of DPRK (see paragraph 13) although a comprehensive agricultural policy document in the public domain was not available at the time of appraisal. The project was clearly oriented toward the needs of the rural poor with a vulnerable food security status, in relatively marginal upland areas. At the time of evaluation and in general terms, the goal of enhancing household incomes and food security would still be relevant, considering the extent of rural poverty in DPRK. However, the case may be made that the real poor people in rural areas today may well not be living in CFs. Workers and civil servants who had to leave their assigned workplace and have had no other choice than to cultivate sloping land to meet their families' food requirements are probably poorer and more vulnerable as they have neither shelter nor social and land tenure security.

55. The mission concurs with the TRC and OSC that the UFSP was coherent with the COSOP. As the COSOP was prepared precisely at the time between project formulation and appraisal, explicit and up-to-date guidance was available from this strategic document. The main reasons given for asserting consistency with the COSOP were: (i) the farming systems thrust of UFSP, as opposed to the sub-sector approach of the two preceding IFAD projects in DPRK; (ii) the choice of the respective project areas in relatively marginal environments; (iii) the inclusion of environmental protection aspects; (iv) the integration of a cooperative and household credit component into the project design; and (v) the intended association of other, including bilateral, donors for project funding. The mission notes, however, that policy dialogue was not given due consideration in project design, although it was

expected that the UFSP would “serve as a vehicle for gradual policy, institutional and technical change in the country”⁴³. This is understandable, as at the time of project design, it was probably unrealistic to expect that the Government would be willing to enter into a structured policy dialogue as suggested by the COSOP. The record shows that the final appraisal report integrated relevant inputs from the IFAD internal quality enhancement and quality assurance processes, as elaborated in paragraph 25. The project also benefited from available knowledge, in particular from the Sericulture Development Project, from 1996 to 2002, and the Crop and Livestock Development Project from 1997 to 2003.

56. Considering the design missions’ limited access to information, be it first-hand through adequate field work and stakeholder meetings, or through documentary review (see paragraph 24), it is not surprising that both the formulation and design reports present very much the official line, and remain superficial in terms of analysis of causes of rural poverty, constrained agricultural productivity, environmental degradation on sloping lands and so on.

57. In any project designed on the basis of a logical framework, the latter is the primary showcase of project relevance in terms of internal consistency. Although the logical framework in the Appraisal Report was strengthened in comparison with the one shown in the Formulation Report, it still had ambiguities between the goal and objective levels (see Appendix 3) while the defined output indicators are more straightforward and have been referred to in Section B above. The performance indicators at goal and objectives levels contained in the logical framework do however allow gauging what the project was supposed to achieve, as shown in Table 12 below.

58. The project strategy, i.e. the choice of components and corresponding financial allocations, must have been a hard-won compromise. It is understandable that the funding of farm machinery and agricultural inputs, under the Sustainable crop production systems component, which constituted more than 50 per cent of project cost, was a Government priority. This apparently made sense as support measures for the introduction of improved crop rotations. Potato seed supply development and reforestation of sloping lands were two other Government priorities. Next to those three components, the other three project components appear almost insignificant in terms of financing. There is, however, no doubt that the Credit component and the participatory Community facilities and services component were IFAD priorities. Those components certainly were much closer to IFAD’s strategy and mandate than the first and largest project component. It seems that IFAD agreed on the first component to be inflated in terms of imports of inputs and machinery, so that the Government would agree to the innovative aspects of the Credit and the Community facilities and services components. The origin and added value of the very small (1.6 per cent of project base cost) Farm output processing component are less clear.

59. Regarding the sustainable crop production systems component, mechanisation, particularly the provision of power for land preparation, was (and still is) a pressing concern in all CFs due to the aging nature and inappropriateness of their existing tractor fleet⁴⁴. However, farm machinery maintenance capacity in the CFs and at county level was not identified as a bottleneck, which in fact was the case⁴⁵. Also, although NAAS and the CFs were reportedly engaged in on-farm research on bio-fertilisers and bio-control agents at the time of project design, this did not substantiate into a project component with explicit funding. Instead, the project prolonged the CFs’ dependency on imported machinery and parts, fertilizer and pesticides. Regarding crop rotations, the Appraisal Report was perceived to be both too prescriptive and prone to misinterpretation, which apparently led to inappropriate advice to CFs and refusal on their part to adopt the rotation plans proposed. Fortunately,

⁴³ IFAD, Democratic Peoples’ Republic of Korea, Upland Food Security Project, Appraisal Report, Report No. 1502-KP, Rome October 2000, paragraph 141.

⁴⁴ The most common 28 HP Korean-made tractors are no longer being manufactured, and the ones remaining in service provide insufficient power for deeper ploughing and powering of mechanised planters, harvesters and sprayers.

⁴⁵ The Formulation Report (Annex 1, paragraph 64) recommends the purchase of farm machinery together with spare parts packages and a short-term consultancy for operation and maintenance. In the Appraisal Report, there is no such reference, and the proposed short-term consultancy did not take place.

this situation was rectified when, after the MTR in 2004, NAAS became more involved and CFs were given training and authorised to design their own crop rotation systems within a framework of principles. Other weaknesses in the design of this component were: (i) the recommendation of a cropping intensity of 200 per cent for North Hwangae Province which was not realistic considering the lack of farming machinery; (ii) the proposed introduction of computer-based farm management, which was found inappropriate by CFs, (iii) the computer-based planning and management tools proposed that did not fit well with the habitual production planning process in CFs⁴⁶; and (iv) the failure to perceive that prevailing soil acidity⁴⁷ was a key limiting factor for crop productivity (see Appendix 8)⁴⁸.

60. The potato seed supply development component rightly tackled a major limiting factor of potato crop productivity and expansion, which was the lack of healthy and good quality potato seeds. Potato is the major crop in Ryanggang province and also an important crop in North Hwangae. The Environment preservation component aiming mainly at reforestation and erosion control on sloping lands, foresaw relevant field interventions. Cooperative management expressed keen support for the planting of fuel wood plots, finding it preferable to the previous system of periodic wood collection from different areas as assigned by MoLEP. The component did not, however, consider promoting sustainable use of sloping lands, although in all appearances since the mid-1990 the livelihood of an increasing part of the rural population depends on the productivity of those lands. This dimension of sloping land management was not added to the project at the time of design, in order to keep the main focus on CFs. The Household and cooperative credit component was intended to tap the talents of household as units of economic activity and drew from relevant experience of the credit component in the IFAD funded Crop and Livestock Rehabilitation Project. In view of its considerable success, important additional funds were injected in this component. The Community facilities and services component was designed and implemented by successfully using PRA methods.

61. Overall, project partnerships were weakly developed during project design, both with national and international institutions. The involvement of co-financiers was well intentioned, but inadequately prepared and not secured by formal commitments, which lead to the nearly complete failure of honouring expected project participation as outlined in the Appraisal Report. The most serious case was that of WFP, which was supposed to provide Food for Work in favour of the environmental protection component. Finally, project design did not take into account the serious communication issues between the PMU, IFAD and other international development partners, which still prevail today.

62. In short, while project objectives were aligned with Government and IFAD strategies, the mission found that the intervention strategy of the project's main component was flawed, and that project preparation did not give enough attention to formalizing project partnerships and ensuring adequate conditions for effective communication. Project relevance is therefore rated 4 (moderately satisfactory).

63. **Effectiveness**⁴⁹. Project effectiveness is assessed as the extent to which the project has achieved its objectives. It should be noted, however, that parts of several specific objectives (see table 1) relate

⁴⁶ CF managers, as well as their counterparts at county level, are highly skilled in manual planning and management and see little use in overhauling their system.

⁴⁷ The Appraisal Report does not mention soil acidity as a main constraint to productivity. The Formulation Report makes reference to liming in its Annex 1, but does not mention it as a key measure to correct soil acidity.

⁴⁸ The FAO Crop and Food Supply Assessment Mission (CFSAM) Report, mentioned in Appendix 8, is dated 2004 and the first available and official reference of prevailing soil acidity, thus not known at the project design stage.

⁴⁹ The main references for effectiveness assessment are the Appraisal Report, the CF database of the 37 and nine CFs, respectively, and data from the PMU contained in this report and appendices.

directly to IFAD impact domains⁵⁰. As such, these aspects will be treated under section III. Rural poverty impact. Overall, the UFSP did improve living standards for the rural households of 46 cooperative farms in upland areas by introducing balanced, sustainable and replicable cropping systems (see paragraphs 64 to 66) and some environmental management (see paragraph 30). Soil fertility was less improved than expected (see paragraph 67) but agricultural production did increase significantly (see paragraph 84).

64. *Sustainable crop production systems.* Starting in or about 2005, all visited CFs have adopted three-year rotations, typically consisting of a sequence of potatoes, wheat or barley, and maize or soybean. The Draft PCR indicates that the new three-year rotation patterns are now practised on over 31,000 ha, against a target of 18,000 ha⁵¹. Perceived in these terms, this is a tangible achievement, considering in addition that many CF managers themselves tend to attribute persistent productivity gains of 20 per cent to improved crop rotation alone. The four-year delay in the adoption of a generic three-year cycle rotation must be due to initial misconceptions, or misinterpretations, of the underlying principles of the proposed crop rotations at appraisal⁵², and the project approach to introduce those rotations through computer-based Whole Farm Planning, a concept foreign to current planning and management practices. The cropping intensity of 200 per cent for North Hwangae Province as foreseen at appraisal was not attained. Double cropping is currently practiced there on about 20 per cent of available upland areas, and less in paddy areas, reportedly for constraints in availability of adequate farm machinery. The insertion of fodder and green manure crops into the rotation is taking place on an experimental basis in North Hwangae Province only, and not systematically in all rotations as expected at appraisal. The slow uptake of this element of the new cropping pattern appears to be driven by the national priority given to cereals and potato production for human consumption.

65. The provision of chemical fertilizer did not have the desired effect on soil fertility because of prevailing soil acidity, probably exacerbated by an unbalanced fertilizer mix. In short, the objective of introducing improved crop rotations and farming practices was met, but with a moderate effect on soil fertility.

66. *Potato seed supply development.* Visits to county level tissue culture factories revealed well managed and efficiently run enterprises that were successfully providing the required volume of quality seeds in time for cooperative farm production. In Pungso district, the mission was provided with sufficiently comprehensive information on all multiplication steps and techniques that allowed it to conclude that the average annual requirement of virus-free commercial potato seed of 7,700 MT can indeed be achieved for covering the average annual potato area of 2,200 ha. While good hygiene is maintained in the in-vitro and greenhouse multiplication units, the (necessary) reliance on field level propagation during seed multiplication exposes material to potential infection by vectors (aphids). According to the PCR, 12 million disease-free potato mini tubers were produced during project life and provided to project farm cooperatives. Improved seed is also available for private plots. The objective of greater availability to cooperative farms of high quality and disease free potato seed has been fully achieved.

⁵⁰ E.g. specific objective 1 refers to increased agricultural productivity and income, and specific objective 3 refers to preserving and enhancing the environment, which are treated, as per the OE evaluation methodology, under rural poverty impact.

⁵¹ IFAD, DPR Korea, Upland Food Security Project, Project Completion Report (PCR), Draft, Rome, July 2008, Annex 1.

⁵² According to the MTR Report, the appraisal recommendations were interpreted by the PMU and certain UNOPS supervision missions as if the CFs had to apply inter-annual block rotations under which given crops are cultivated on large areas in one year and subsequently not grown at all for one or two years. The mission found no documentary evidence that the project indeed proposed such inter-annual block rotations. Whatever the facts, such a scheme is not practicable, and the participating CFs had every right and reason to ignore it.



**In-vitro potato seed multiplication at Gwanhung CF,
Ryanggang Province**

Source: Ernst Schaltegger

67. *Environment preservation.* Activities have been delayed by structural coordination problems between the project, MoA, MoLEP and WFP, and the practical absence of WFP funding. A small programme, for which WFP delivered a total of 1,145 tons of food for work, was successfully implemented in 2003. However, in the end, the target of 5,400 ha of wood lots has been achieved, with MoLEP and CF contributions for the major part. Survival rates were reported as quite high in North Hwangae (some 80-90 per cent), but can be significantly lower in Ryanggang, particularly in poor rainfall years (down to 50 per cent). Anti-erosion measures, called conservation forests in the logical framework, attained 50 per cent of the planned 2,400 ha. In short, the objective of planting fuel wood plots was achieved, but other erosion control measures were only partly successful.

68. *Household and cooperative credit.* The credit component was implemented effectively by CB and CFs, with zero default rates and for the anticipated number of beneficiaries by the end of 2007. The revolving credit fund currently amounts to 342.2 million KPW, about US\$2.28 million at the current exchange rate. A total of 47,671 loans were underwritten to households to purchase animals and feed, with an average loan amount of 9,736 KPW. All 46 CFs have benefited twice from loans on three-year terms for a total amount of 156.8 million KPW. Women were the main borrowers for household credit, receiving about 90 per cent of the loans (against the 50 per cent appraisal target). The objective of providing credit services encouraging and enabling livestock and other enterprises by cooperatives and their farmer members was fully met.

69. *Community facilities and services.* The participatory planning approach for community investments introduced by the project was successfully applied and all 37 CFs concerned have been able to select, plan and implement community facilities and services in a participatory manner, although with a substantial delay. The objective of developing capacity of cooperative communities to select and undertake productive projects has been achieved. Certain CF managers met said they would use participatory planning again in the future for community investments.

70. *Farm output processing.* The project also succeeded in improving processing capacity of cooperative farms. Farm output processing facilities installed since late 2006 appear to be in regular use, and add value to production while reducing manual labour. The mission noted, however, deficiencies regarding the safety of electrical installations.

71. Based on the considerations above, project effectiveness is rated 5 (satisfactory).

72. **Efficiency.** The assessment of efficiency is particularly challenging in the context of DPRK because of the generalized scarcity of statistics and comparative data, and the administered nature of costs and prices⁵³. In this context, it makes little sense to attempt economic or financial efficiency calculations. However, efficiency was addressed in terms of timeliness of project implementation, purchasing costs and end-user efficiency of procured equipment. An important loss of efficiency in rural credit component is also addressed.

73. The time lag between project inception and Board approval – one year – and between Board approval and loan effectiveness – three months – was exemplary, as was the case for the two former projects in DPRK. However, unlike the two former projects, which were completed in time according to their appraisal estimate, UFSP required a two-year extension. The procurement of farm inputs and machinery under the sustainable crop production systems component, the credit component and the potato seed supply component were implemented according to schedule. However, implementation was slow during the first half of the project for all other components. Project implementation was slow during the first half of the project for all but the credit component. The main reasons for delays incurred were: (i) the lack of clarity or inappropriateness of certain design features, in particular concerning the largest project component; (ii) the meagre contribution and early withdrawal of international project partners due to the lack of formalisation of agreements at project start-up and, subsequently, the poor communication and coordination between the PMU and project partners; and (iii) the late formal involvement of national partners. Consequently, the MTR recommended a one-year extension. After the MTR, the project suddenly shifted gears, by allowing CFs to prepare their own crop rotation plans and field trials with guidance from NAAS scientists and the CCFMSs, and by mobilizing IFAD grant funds for further TA to the project. As a result, the project succeeded in making up for most delays by mid-2007.

74. The most cost-intensive items, farm inputs and farm machinery, appear to have been purchased at comparatively competitive unit prices as most of them originated from China. In the case of urea, close to 11,000 MT were purchased between December 2001 and August 2005 (see Table 3), starting at US\$131/MT and finally reaching US\$198/MT. World market prices evolved from US\$130/MT to US\$280/MT in roughly the same period⁵⁴. Regarding farm machinery, the mission compared the prices for new 75 Horse Power (HP) four-wheel drive tractors in the US, which are given as US\$32,000 per unit in 2008⁵⁵. By deflating the 2008 prices with the farm machinery price index difference (189 in 2008 and 160 in 2003), such a tractor would have amounted to US\$27,090⁵⁶ in 2003. The project purchased Chinese four-wheel drive tractors for less than US\$12,500, ranging from 60 to 80 HP.

75. However, the respective end-user efficiencies were constrained by the fact that: (i) plant availability of the purchased fertilizers may only have been around 50 per cent at present soil acidity levels (see Appendix 8); and (ii) purchased farm machinery is only in part functional for the lack of timely supply of tyres and spare parts, and for the concurrent deficiencies in machinery maintenance facilities. This limited end-user efficiency was to the detriment of the participating CFs, as they had to pay to MoA all items, including internal transport cost, either directly or via standard loans. There, the question arises whether the benefiting CFs got adequate value for money. On the other hand, they all obtained farm inputs and machinery at the official exchange rate, thus at prices substantially below economic prices.

76. The effect of the 2002 artificial inflation on the credit component was considerable, as presented in paragraph 48. The mission estimates that the revolving fund lost about US\$1.2 million, or 180 million KPW at the current exchange rate. Moreover, US\$2.23 million of unspent loan proceeds were

⁵³ In the available documentation from the IFAD Sericulture and Crop and Livestock Rehabilitation Projects, efficiency is not addressed as an evaluation criterion.

⁵⁴ International Fertilizer Development Centre (IFDC), <http://www.ifdc.org/i-wfp021908.pdf>.

⁵⁵ University of Minnesota, Extension, Machinery Cost Estimates, Minneapolis, March 2008.

⁵⁶ Economagic.com:EconomicTime Series Page, <http://www.economagic.com/em-cgi/data.exe/blswp/wpu111>.

reallocated to the household credit component following the Governments request at the very end of the project (see paragraph 26) without proper measures to ensure that the full value would reach the beneficiaries (see paragraph 107). The value of the amount reaching the beneficiaries in local currency is far below the opportunity cost of the amount in hard currency transferred by IFAD to DPRK⁵⁷. This signifies an important loss in efficiency for the credit component and the project overall.

77. Considering the above, and keeping in mind the caveat in paragraph 72, project efficiency is rated 3 (moderately unsatisfactory).

VI. RURAL POVERTY IMPACT

78. The impact domains covered, as per the OE Project Evaluation Manual, are: (A) Household income and assets; (B) Social capital and peoples' empowerment; (C) Food security and agricultural productivity; (D) Natural resources and the environment; and (E) Institutions and policies. Each of the observed impacts per domain is further substantiated below. The assessment of rural poverty impacts is made using the available figures and with some caution. The main references for assessing rural poverty reduction impacts were: (i) the sample surveys of 144 households in 2000, 2003 and 2007, and (ii) the 38 household interviews conducted by the mission. Regarding the figures given for the year 2000, the sample survey database infers that data for this year have been "retro-engineered" to be nominally equivalent to values prevailing after the KPW-US\$ devaluation of July 2002. This method did not take into account the distortions imposed by this devaluation (see paragraph 12).

A. Household Income and Assets

79. As foreseen at appraisal, the project proceeded to carry out household surveys in the years 2000, 2003 and 2007, covering a sample of 144 households in 24 cooperative farms, all of these being in the lot of CFs with full project support, equally distributed over the four counties. One third of the surveyed households were female headed and two-thirds male headed, of which half with one farmer, and the other half with at least two farmers. This database was the most important source for assessing the impact domain of household income and assets, while the household interviews conducted by the mission shed light on food security issues (see paragraphs 85-86). The figures in Appendix 11 infer the following:

80. **Trends in income by sources.** In all four counties, average livestock income, farm dividends and total income increase in average by about 100 per cent or more from 2000 to 2007. Income from other sources is insignificant in all cases. The absolute income indicator in Appendix 3, of US\$900 per farm worker at project completion was not, however, achieved. According to both the CF database of the PMU and the PCR⁵⁸, average annual income per farm worker in 2007 reached somewhat more than US\$300, roughly doubled compared to 2002 levels. The distortions imposed by the 2002 KPW-US\$ devaluation, and the still administered KPW-US\$ exchange rate, make an assessment in absolute monetary terms difficult. Both, savings and debts (household credits) increase over time, however more markedly for credits than for savings, which appear mostly under the form of household appliances. The latter is explained by: (i) the limited opportunities for households to reinvest cash income in productive assets, as current Government policy restricts individual economic activities in CFs, and (ii) the risks related to saving (see also paragraph 12);

- (a) **Variance or disparity of income by sources, and of savings and debts.** The progressive increase of incomes from all sources, except from other sources, was accompanied by an increasing disparity over time in Singye County. The 36 samples households in this county saw their average total income surge from 42,000 KPW in the year 2000 to 108,000 KPW in 2007, but disparity in total income also increased, from 20

⁵⁷ According to Foreign Policy, June 2007, (http://www.foreignpolicy.com/story/cms.php?story_id=3880), the official exchange rate of the Won to the US\$ was 150 to 1, far lower than the black market rate estimated at 2,500 to 1 or higher.

⁵⁸ IFAD, DPR Korea, Upland Food Security Project, PCR, Draft, Rome, July 2008, Annex I.

per cent to 40 per cent. In the remaining three counties, the increase in income in the same categories (livestock, farm dividend and total) was not marked by a significant increase in disparity or variance, hinting at a more equitable distribution of income categories, over the period between 2000 and 2007; and

- (b) **Gender patterns.** There are no significant differences between female and male headed households regarding the following variables, over the three points in time: (i) total average number of household assets; (ii) total average number of livestock assets; (iii) average livestock income; and (iv) average total household income.

81. The impact on household income and assets, given their magnitude, gender sensitiveness, equity and possible outreach, but also some remaining doubts on the consistency of data for the year 2000, is rated 5 (satisfactory).

B. Human and Social Capital and Empowerment

82. The project has contributed to improving the management capacity of CFs, which provide a social safety net to an important portion of the rural population and in all appearance function in a democratic and relatively transparent manner. The fact that (i) the evaluation mission was granted access to households, in all appearance without prior notice; and (ii) both CF managers and household members had facts and figures on project relevant CF and household activities at their fingertips seems to underpin this assessment.

83. The concomitant growth of both farm dividends and livestock income hint at the capability of practically all households to assume risk in rearing and/or fattening animals that are provided on a credit basis. Entrepreneurial freedom is no doubt limited, not least by the impossibility of physical business expansion, due to the 100 m² household plot limit. Devoting extra time to quasi-entrepreneurial activities with adequate personal reward appears to have unleashed talent as much as enthusiasm. In all counties except Samsu County, livestock income amounts to more than 50 per cent of farm dividends, and practically reaching the same magnitudes in Goksan County. Again with the exception of Samsu, livestock household income grew faster than farm dividends over the survey period⁵⁹. Although these considerations refer to household income, they are highlighted here under social capital because the individual household interviews suggest that the ability to handle economic activities at own risk and responsibility may have important non-monetary implications, in particular the empowerment of women as close to 90 per cent of the household credit borrowers were women, against the target of 50 per cent.

84. Considering the above, impact on social capital and peoples' empowerment is rated 6 (highly satisfactory).

C. Food Security and Agricultural Productivity

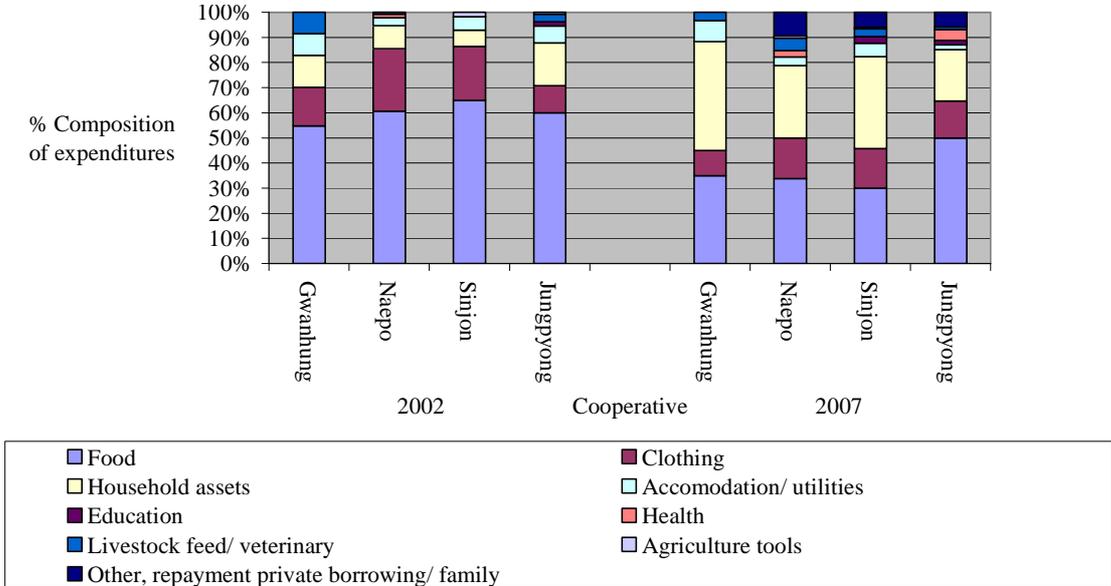
85. Agricultural productivity increased over the project's life in both the 37 CFs with full project support and the nine CFs with partial project support, however more markedly in the case of the former. In CFs with full support rice, potato and soybean yields increased on average by approximately 45 per cent between 2002-2003 and 2006-2007, and maize, wheat and barley yields by about 40 per cent⁶⁰. Figure 3 and 4 of Appendix 9 visualise these trends. As such, except for rice, all end-of-project yield targets have been achieved or overshot. CF managers met, attribute persistent productivity gains of 20 per cent to improved crop rotations alone. Incremental production complied with the appraisal targets for maize and potatoes, but did not achieve them in the case of rice, soybean

⁵⁹ There is no rational explanation for this pattern as the households in Samsu County received proportionally the same credit amounts as the households in other counties.

⁶⁰ CF database provided by the PMU. Yield increases calculated as the increases between biannual 2002-2003 averages and 2006-2007 averages.

and wheat/barley. This is partially due to the reduction of soybean and wheat/barley area in the participating CFs and the impracticability of the anticipated 200 per cent cropping intensity in North Hwangae Province. Most notably, potato production increased by 78 per cent⁶¹. Average potato yield has increased significantly in both provinces over the duration of the project, by some 4.3 tonnes per hectare in North Hwangae and some 7.9 tonnes per hectare in Ryanggang. Provision of virus free and quality seed potatoes has played a major role in enabling these increases in production. Further details on crop yields and production are shown in Appendix 9.

Figure 4. Comparison of household expenditures in Ryanggang Province between 2002 and 2007



Source: Household interviews of the evaluation mission

86. The 38 individual household interviews confirmed that the income composition and expenditure destinations have changed over the project period. The relative importance of farm dividends decreased from 40-50 per cent to 30-40 per cent of total income between 2000 and 2007. The income portion from livestock increased from around 20 per cent to over 30 per cent, whereby the income from the individual garden decreased correspondingly. Concurrently, the portion of expenditures dedicated to food decreased from 55 per cent to 35 per cent in Ryanggang Province and from 45 per cent to 35 per cent in North Hwangae Province in the same period. The available cash went increasingly into household assets. This trend is confirmed by the household surveys of 2000, 2003 and 2007. A decrease of the income portion spent on food is generally accepted as a measure of increased food security (see Figure 4 above).



Children aged 5 to 7, Kindergarten of Hoam, CF, North Hwangae Province

Source: Michael Carbon

87. The value added by the individual household interviews is that the respondents confirmed that food security has improved in two ways: (i) by disposing of more available cash income; and (ii) by the intake of more animal protein and lipids⁶² from the animals reared or fattened by the households.

⁶¹ From 81,352 tonnes in 2002 to 145,194 tonnes in 2006.

⁶² According to the WFP the persistent lack of animal protein and lipids for pregnant and lactating mothers also leads to stunted growth of children.

The overall prevalence of stunting in children has fallen by 2.9 per cent from 36.9 per cent in 2002 to 34 per cent in 2006. According to the most recent survey⁶³, conducted in November 2006 by the central bureau of statistics of DPR Korea, an average 34 per cent of young children in DPRK were found to be chronically malnourished. Chronic malnutrition rates were “critical” in Ryanggang Province (43.5 per cent), while in North Hwangae Province (37.7 per cent) showed “serious” chronic malnutrition levels. While malnutrition rates have fallen since 2002⁶⁴, they are still relatively high. Anecdotic evidence from the mission’s visits do infer that about one third of children aged five to seven in kindergartens appear to be stunted, but in no observed case underweight (see photo). Stunting may be a proxy indicator for malnutrition at early age, i.e. around the time of project design. Hence, it would appear that the present status of children in the project CFs indirectly infers an improvement of food security.

88. Given these considerations, impact of the project on food security and agricultural productivity is rated 5 (satisfactory).

D. Natural Resources and the Environment

89. Apart from their production of wood, the afforested areas play a key role in the protection of vulnerable sloping lands that are increasingly being cultivated (including land outside of cooperatives, of more than 15 degree slope). As gully erosion is visible on cultivated hill slopes, these measures cannot be emphasized enough, also considering the geographic extent on which cultivation on sloping lands is taking place, i.e. about 1 million ha or more on a national scale (see paragraph 9). While the project achievements (5,500 ha of fuel wood plots and 1,200 ha of anti-erosion measures) are significant for the individual CFs, they are inevitably marginal when facing sloping land degradation at national level. On the other hand, this impact domain was strongly driven by an attitude change in matters of environmental preservation without which the achievements would not have been attained, especially considering the absence of proper funding from WFP.

90. Under these circumstances, a rating of 4 appears appropriate for impact on natural resources and the environment (moderately satisfactory).



Deforested Hillsides in Pungso County, Ryanggang Province

Source: Liz Kiff

⁶³ Central bureau of statistics of DPR Korea, Nutrition Assessment, Pyongyang, November 2006.

⁶⁴ WFP/UNICEF and central bureau of statistics of DPR Korea, Nutrition Assessment, Pyongyang, November 2004. The reference year for this survey is 2002.

E. Institutions and Policies

91. Although the adoption of new crop rotations has been slower than expected at appraisal, for the reasons given in paragraph 64, is part of a notable shift in institutional handling of the production planning process. According to the testimonials retrieved, national production planning does now allow initial proposals of cropping patterns to be made by the CFs, which are then reviewed by the respective CCFMCs and the provincial representatives of MoA, the PRECs. The final decisions lie with MoA, which adjusts the annotated production plans against national requirements and availability of inputs. This shift in the agricultural production planning approach has not been induced by the project (see paragraph 12) but it was in a position to take advantage of this development. A positive institutional and policy impact that can be attributed to the project was the creation of a potato seed production system, which is complex by nature and built on a decentralised set-up. The CFs are apparently also able to co-design and implement on-farm trials, which later culminate into official extension recommendations, as in the case of Hukbosan. The ongoing liming trials bear the hope that corresponding recommendations will be issued in a not so distant future. Under the project, the CFs were in a position to determine and then to implement the community facilities and services component, to realise the farm output processing component and to administer the credit component efficiently in concert with CB. These are positive trends in an institutional environment that is otherwise very vertical and closed. They hint at an increased management capacity of MoA and the ability of CB to coordinate the credit component adequately, especially at county and DF level.

92. Impact on institutions and policies therefore deserves a rating of 4 (moderately satisfactory).

F. Attribution of Impact and Perception by Beneficiaries

93. Appendix 9 indicates that crop yields in the 37 CFs with full project support progressed better, to the tune of about 20 per cent, than the ones observed in the nine CFs with only partial support, from very similar initial levels in 2002. When comparing the trends in financial results (incomes by sources, expenditures, especially for inputs, and net overall incomes and per household and farmer), again between the CF groups with full and partial support, there is no doubt that impact can be attributed to the project. The selected drawings in Appendix 12 reveal that impact domain perception by the concerned household members focuses on household assets in the very first place, followed by graphic associations to food security and then to social capital, such as being able to become a teacher or to marry sons and daughters in a traditional fashion. The outlook on future expected impacts is not fundamentally different from the past impacts perceived, but reaches out to more sophisticated and valuable assets, such as better housing, computers and motorcycles.

94. Summing up the assessment of the various dimensions of rural poverty reduction, overall rural poverty impact is rated 5 (satisfactory).

VII. SUSTAINABILITY AND INNOVATIONS

A. Sustainability

95. The widespread adoption of improved crop rotations and of techniques to maintain soil organic matter constitutes the basis for much needed further improvements in soil fertility management. The new rotations are technically sound, as confirmed by the visited CFs, and very likely to be continued after the project. The concomitant shift from rigid top-down central planning to a more participatory method, though still within relatively narrow boundaries, bears the potential of unleashing additional human talent at various levels. As things stand now, it would probably be difficult to revert to the previous mode of vertical planning.

96. Households, particularly women, have been sustainably enabled to detect and exploit incremental economic and social potential by a controlled out-sourcing of livestock activities at an appropriate level of individual attention, for which small animal rearing and fattening appears to be

ideal. In this respect, this outsourcing resulted not only in reaping economic benefit for the households and the CFs (which sell young stock to households and, after fattening, to the established marketing channels) but also knowledge, experience and self-confidence to assume risk and responsibilities. This is the essence of social capital and empowerment, which is rated 6 above. The further development of a livestock breeding and fattening system, in tandem between CFs and households, is a positive factor of sustainability as it generates assets, income, savings and thus major resilience to future shocks and stress.

97. Sustainability of the potato seeds supply is very likely, as potato seeds will remain in high demand for years to come, and the investments are adequately operated and well maintained. The fact that fuel wood lot planting and soil protection works on sloping lands were carried out with hardly any financial support from the project, seems to indicate that such activities are embedded and will probably be continued after the project.

98. However, the dependency on imported machinery, spare parts, inputs and energy is pervasive for the agricultural sector as a whole. USFP was in a position to grant only a temporary relief and failed to promote the large-scale adoption of agronomic solutions that would reduce the need for imports, such as green manure crops in crop rotations, advanced animal traction and Conservation Farming techniques, bio-fertilisers and bio-pesticides etc. Moreover, the project did not give due attention to improving county machinery maintenance capacity, thus missing an opportunity to extend the durability of the procured equipment.

99. The visibly continuing process of cultivating sloped land originally under forest, outside the official array of CFs, is an important sustainability concern for the environment and agricultural production (more frequent floods, rapid soil degradation through erosion etc.). As mentioned before (paragraph 9), large areas of sloping land are currently under cultivation both by people that do not belong to CFs, mostly to complement their food requirements, but also by CF members, in particular to produce animal feeds. The need for animal fodder may unintentionally have been reinforced by the household credit component.

100. The productive resource base of the CFs and households remains fragile. A consecutive series of bad harvests may compromise the respectable impacts achieved by UFSP. On the national level, food production in DPRK will, in all likelihood, remain under pressure as only in years with good harvests, such as in 2005, the estimated 5.1 million tons of cereals or cereal equivalents required to feed the people of DPRK can be assured. The centrally planned economy, although with some recent positive signs of decentralization, may continue to be marred by inherent limitations that constrain sustainability.



Dwellings and cultivated sloping land at Masan CF, North Hwangae Province

Source: Ernst Schaltegger

101. In short, although several positive changes introduced by the project, such as sound crop rotations, potato seed supply, individual livestock fattening activities in the CFs and the fuel wood plantations have a high sustainability potential, there are a few non-negligible sustainability risks. Sustainability is therefore rated 4 (moderately satisfactory).

B. Innovation, Replication and Scaling Up

102. The introduction of new crop rotations may be viewed as innovative, although the component ran into unnecessary problems because of insufficient prior consultation with the direct stakeholders and the research community. According to the information retrieved by the mission, the new crop rotations have been replicated by CFs outside the ones supported by the project.

103. Innovation also took place, even though it was not consciously promoted by the project, through field trials with fodder crops, Hukbosan and liming. In Pungso County of Ryanggang Province, the multiplication scheme for virus-free potato seed is reportedly also used by CFs that were not supported by the project. However, potato yield response of the nine CFs not fully supported by UFSP is conspicuously absent when compared with the 37 CFs with full project support. A downside with regard to replicating and scaling up the above mentioned agronomic innovations, is that research and development findings are not of the public domain in DPRK.

104. An important innovation was present in the credit component, which promoted household level animal breeding and fattening activities, taking advantage of individual zeal and initiative, in complement and not in competition with collective farming activities. Also, the efficient manner in which the credit component was handled (most transaction costs were outsourced to the CFs) was well adapted to the cooperative system in DPRK and may be considered innovative. The successful credit component is, however, apparently not yet being replicated outside the project CFs. Current Government policy also restricts opportunities for CF households to develop individual economic activities, which constrains the further increase of benefits from household credit.

105. In short, the project did promote the introduction of a few important innovations in project CFs, only part of which appear to have been replicated outside project CFs. The mission therefore rates this criterion 4 (moderately satisfactory).

VIII. PERFORMANCE OF PARTNERS

A. IFAD

106. The mission commends IFAD for its support to the rural poor in DPRK, as the only International Financial Institution currently lending to the country. IFAD succeeded in designing a project that was relevant to national and IFAD strategies at the time and drew from lessons from former and ongoing interventions in the country. The internal review of the project formulation allowed for several improvements in project design. However, project preparation was affected by limited access to information in DPRK, an insufficient involvement of national stakeholders and the lack of efforts to firm up partnerships with development partners. As a result, the intervention strategy of the project's largest component (component 1) was inadequate, and project partnerships, including co-financing arrangements, were not formally established at project start-up. Fortunately, considerable improvements in project strategy, in particular for component 1, were introduced at MTR.

107. After Board approval in December 2000, IFAD's level of attention to the project clearly decreased. One of the key problems was the very difficult communication links between the PMU and IFAD. With the prior experience of IFAD in DPRK, this problem could have been foreseen. Since project inception, five different Country Programme Managers (CPMs) were responsible for USFP. As the supervision missions were outsourced to UNOPS, very few opportunities for collecting first-hand experience arose. After project approval, IFAD staff reportedly visited Ryanggang Province only twice, at MTR and at the first supervision mission conducted by IFAD itself, in July 2007. The combination of insufficient communication and lack of continuity of CPMs lead to a strongly felt isolation of the PMU, which would have been eager to be granted more systematic implementation support, in practical matters such as procurement, accounts and audits. In the absence of such implementation support, issues that piled up had to be addressed as late as after the second-last supervision mission of 2007 directly fielded by IFAD. There were attempts to correct issues of communication and financial management by using remaining project funds and assigning technical assistance to this effect. However, the evaluation found no evidence that communication equipment

was purchased by the project with loan proceeds as recommended. The training in Financial Management was held after project completion in July – August 2008.

108. Over the life of the project, IFAD agreed to reallocate significant loan resources to the successful credit component, which, as a result, grew from merely 3.6 per cent to almost 20 per cent of total project cost. US\$2 million were reallocated to the credit component after MTR to help limit the impact of the 2002 artificial inflation of prices. In addition, around US\$2.2 million were further reallocated to the revolving fund of the household credit component at the very end of the project's implementation period in June 2008. The evaluation is concerned, however, about the appropriateness of this last reallocation, given that it will be extremely challenging for the Fund in the post-project period to monitor and ensure that this large amount of resources will be utilised entirely in line with project objectives, a concern that was already raised by the 2007 supervision mission. Measures to ensure that the full value of the reallocation would reach the beneficiaries, as mentioned in the first justification of the reallocation to the project management department⁶⁵, were not applied.

109. On the basis of the elements presented above, IFAD performance is considered moderately unsatisfactory (rating of 3).

B. UNOPS

110. UNOPS was the designated Cooperating Institution (CI) for loan administration and implementation support. UNOPS supervised the project from Bangkok (regional loan administration office) and Beijing (historical base for the UNOPS portfolio managers with responsibility for DPRK). Communication between UNOPS and the PMU outside supervision mission was very difficult, considering the unavailability of Email, telephone or fax at the PMU.

111. Five supervision missions took place, in 2001, 2002, 2003 2005 and 2006, plus one monitoring and evaluation support mission in 2002. The quality of supervision reports, diligently covering component implementation progress, expenditure status per category, loan covenant compliance and the implementation status of previous recommendations, was acceptable. However, the supervision summaries indicate that continuity of supervision mission members was weak, with only one reported case of a member present in two subsequent missions, and one in two missions two years apart. The short time available to supervision teams meant there was no opportunity for supervision teams to visit the most remote of the two provinces, and did not allow for proper working sessions and a wrap-up meeting with project stakeholders at the end of each mission. All those factors contributed to sometimes superficial, misunderstood and even contradictory technical recommendations by consecutive supervision missions, in particular for the sustainable crop production systems component.

112. The supervision of procurement was performed remotely by UNOPS in Bangkok and relied mostly on the bid evaluation reports and English translations of supplier documents sent to it by the PMU. An IFAD supervision mission visited UNOPS offices in Bangkok and Beijing to verify procurement documentation. They found the filing system for hard and soft copy procurement records disorderly and of little assistance to their investigations. Often, no photocopies of the suppliers' original invoices were on record. Also, UNOPS allowed several expenditures in cases where contract splitting – to by-pass UNOPS prior review – was obvious.

113. According to the 2007 IFAD supervision report⁶⁶, UNOPS failed to alert the Government and IFAD that the Government did not fully comply with the Loan Agreement, namely with respect to the

⁶⁵ The Office Memorandum of 19 October 2007 to Mr. Kevin Cleaver, Assistant-President PMD, from Mr Nicola Favia, CPM, mentions that IFAD loan proceeds would be used to internationally procure goods, which would then be sold to CFs in local currency. The revenue would be allocated to the household credit revolving fund. This way, the conversion of hard currency into local currency would occur while (i) better preserving the opportunity cost of the amount, and (ii) ensuring that the hard currency was used in line with project objectives.

⁶⁶ IFAD, DPRK, Upland Food Security Project, Final Supervision Report, 2007.

Government's engagement to enter into agreements with UNDP, WFP and FAO. The mission concurs that supervision reports provided unclear statements in this respect, but the postponement of UNDP and FAO contributions year after year should have been a strong signal to IFAD that something was wrong.

114. Consequently, UNOPS performance was found moderately unsatisfactory (a rating of 3).

C. Government

115. MoA was the implementing agency, with a PMU under its direct authority. The head of PMU had prior exposure to the two previous IFAD projects, which was helpful in an otherwise difficult communication environment and in the midst of complex rules of project administration. The PMU of UFSP is unique in respect of its functions when compared to project management outfits prompted by IFAD in other countries. In DPRK, the PMU is also responsible for managing the reimbursements schedules, of interest and principals, of all IFAD projects, which caused – and continue to cause – financial commitments of DPRK toward IFAD. Consequently, the PMU is endowed with functions that spread from financial management of an ongoing project, procurement, import and delivery of goods to the MoA supply channels, annual planning of work and budget, to donor driven monitoring and evaluation functions that get progressively more sophisticated, and finally to the management of loan agreements concerning projects that have been completed years ago. To accomplish these tasks, the PMU has no proper email account, no access to the Internet and no way to directly contact IFAD, UNOPS or other project partners by telephone.

116. Keeping in mind these limitations, the PMU succeeded in assuring input delivery to the 37 CFs with full project support, and to guide the other Government agencies to concert project activities in the various components not directly under the control of the PMU. The PMU managed to secure stronger involvement of NAAS after MTR, which probably saved the technical aspect (introduction of sustainable crop rotations) of the project's major component. However, the PMU was not strong or connected enough to prompt co-financiers to make significant steps to legally implement what the Appraisal Report put forward in terms of co-financiers' commitments, amounting in total to US\$7 million. Supervision missions also noted several issues regarding fiduciary management of the project, namely: (i) problematic access to the essential financial information; (ii) serious irregularities in procurement procedures; and (iii) shortcomings in financial statements, both from the PMU and CB. At the time of the main mission, in April 2008, the PMU had not yet prepared the annual activity and financial reports for 2007, although hardly any activity had taken place since mid-2007.

117. The policy shift in 2002 (see paragraph 12) allowed for more autonomy in production planning for the CFs, which facilitated the implementation of component 1 in particular. However, the devaluation of the KWP coupled to the artificial inflation of prices in 2002, reduced the real value of the credit funds by a factor of 40-60, which had to be rectified by a reallocation of US\$2 million to this component, as recommended by the MTR. Also, efforts by MoA, as the responsible line ministry of the UFSP, to support the establishment of partnerships between the project and national and international institutions in DPRK were insufficient. This can be understood in light of the Government's ambiguous relationship with development partners, with whom it obviously prefers to treat separately. It is also of great concern in the framework of an international development project, that information is managed in a very restricted manner and that development partners are not readily granted access to the field. As mentioned in paragraph 24, limited freedom of movement and scarce access to background data for both the formulation and appraisal missions, have handicapped the project design process, and thus affected project relevance. For this evaluation, project information that would have been useful early on in the process for reasons of comparison, and which had been requested by the preparatory mission, was not forthcoming until the very end of the evaluation mission. Resistance to share information and knowledge was even stronger with institutions associated to the project, such as CB, NAAS and MoLEP. The mission is aware that stringent rules exist in DPRK in relation to information management. But the same mission was allowed access to CFs, which permitted an interaction in a manner conducive to mutual learning.

118. Based on these considerations, a Government performance rating of 4 is indicated (moderately satisfactory).

D. Beneficiaries

119. The target population, called beneficiaries in all relevant project documentation, are in reality clients. The CFs had to pay all farm inputs and machinery, building material for community facilities and service and food output processing equipment, either in cash or credit with an annual interest of 5 per cent. The households did not receive grants but credits at the same conditions of interest. Consequently, they deserve a performance rating along with the other project stakeholders.

120. The beneficiary universe amounted to about 18,000 farm households or approximately 70,000 people. Most of them have been involved – directly or indirectly – in a varied set of project activities. Sheer need or misery could not explain the high level of commitment that the evaluation was able to discover. There must have been a mix of talent, determination and positive outlook for the future involved, as highlighted also by the drawings, which suggests that such investments in human resources are worthwhile. Especially commendable is the zeal with which CF members have contributed to the environmental preservation component and have made use of household credits to judiciously invest in small livestock raising. For an interim evaluation, such a level of beneficiary performance is a promising prospect for further projects.

121. Beneficiary performance is rated 6 (highly satisfactory).

IX. CONCLUSIONS AND RECOMMENDATIONS

A. Conclusions

122. In general terms, the UFSP has contributed in attaining IFAD's strategic objectives, i.e.: *Poverty alleviation by targeting rural poor in marginal areas with food security constraints; and Empowering beneficiaries through interventions such as household credit, natural resources management, community facilities and services and farm output processing.*

123. The project was relevant in the sense that it addressed food security and rural poverty constraints at the time of appraisal and chose marginal upland areas in a farming systems approach, very much in line with the COSOP. On the other hand, the design of the project's main component, sustainable crop production systems, contained some important flaws and overvalued the end-user efficiencies of both farm inputs and machinery, which were depressed by widespread soil acidity and insufficient machinery maintenance capacity, respectively. These constraints could have been foreseen, and were mainly due to a lack of involvement of project stakeholders and other local expertise at the design stage. Project design also underestimated the serious communication problems and failed to secure the participation of co-financiers. With the experience of the two previous IFAD funded projects, the subsequent implementation problems could have been anticipated and addressed at design stage.

124. Despite the flaws mentioned above, the project was implemented with satisfactory effectiveness, although with important delays in the first project half. Efficiency was also affected due to the KPW devaluation in 2002, which led to the loss of about one third of IFAD funds invested in the credit component, and limited end-user efficiencies of input and machinery imports.

125. Overall poverty reduction impact was satisfactory, notably in terms of household income and assets, social capital and empowerment and agricultural productivity and food security. The mission concludes that these achievements were possible to a large extent due to the CF and household credit component, which unleashed enthusiasm and talent and eventually generated the above mentioned impacts. Small livestock reared and fattened by households, in conjunction with an organized supply of young stock and close-by marketing channels, appears to be a winning formula for making important leaps in rural poverty reduction. Tapping the talents of household as units of economic activity has particularly paid off: with only 10 per cent of actual project cost, the returns were broad-based, significant and harbouring a high potential of sustainability.

126. However, a number of factors limit sustainability of project impacts, such as the continuing dependency on imports of agricultural production in CFs, the increasing cultivation of sloped land originally under forest, outside the official array of CFs, and the enduring fragility of the resource base of the CFs and households.

127. Table 12 below summarizes the ratings given in the previous chapters and sections, with an overall rating of project achievement of 4 (moderately satisfactory).

Table 12. Rating Summary

Evaluation Criteria	Evaluation Ratings
Project performance	
Relevance	4
Effectiveness	5
Efficiency	3
Overall project performance	4
Rural poverty impact	
Household income and assets	5
Human and social capital and empowerment	6
Food security and agricultural productivity	5
Natural resources and the environment	4
Institutions and policies	4
Overall rural poverty impact	5
Other performance criteria	
Sustainability	4
Innovation, replication and scaling up	4
Performance of partners	
IFAD	3
UNOPS	3
Government	4
Beneficiaries or clients	6
Overall project achievement	4

B. Recommendations

128. As the UFSP was an interim evaluation, the following recommendations aim at setting a preliminary stage for the design of a subsequent IFAD operation in DPRK. Agreement on those recommendations and principles should be formalised in the forthcoming results-based COSOP – a necessary step before initiating the design of a follow-up IFAD investment loan. With this in mind, the evaluation makes the following recommendations.

Recommendation 1: Project design

129. To ensure that future IFAD intervention in DPRK respond to the needs of the rural poor and propose sound and sustainable technical and institutional solutions to rural development constraints, the design process for future IFAD interventions in DPRK would require:

- Broad participation by the envisaged target population, and their existing forms of organization. This would require that design teams spend considerable time in the field, meeting with poor people and observing the reality in rural areas;
- Strong collaboration with national and international rural development partners. Design teams should be composed of staff from potentially partnering institutions. Along the design process frequent stakeholder meetings should be organized to ensure that ideas and opinions are regularly shared;
- That the Government grants full access to relevant information required for a sound project design, such as the national poverty reduction and rural development strategies, data on

population and the economy, current agricultural practices, agricultural research results, information on health and education in the rural areas and so on; and

- That IFAD mobilizes its own resources to enhance its knowledge and understanding of the country and the needs of the rural poor, considering that little country economic and sector work on DPRK by other international institutions. The preparation of the new COSOP is the best opportunity to start building a solid knowledge base.

Recommendation 2: Partnerships

130. Partnerships are key to development cooperation with DPRK, not only for the design of interventions (see recommendation 1b) but all through project implementation, monitoring and evaluation. Collaborations facilitate information sharing, improve coordination of efforts, ensure that each partners' comparative advantages are mobilized and increase accountability. Therefore:

- IFAD should give particular attention to enhancing its partnerships and building new collaborations with national and international institutions concerned with agricultural and rural development in DPRK, such as NAAS, MoLEP, FAO, WFP, the EC and several international NGOs;
- The Government should actively encourage partnerships among national and international institutions and take up a coordinating role;
- The Government should also promote information sharing between the PMU and project partners, all through the project cycle, with the aim of developing a transparent framework conducive to sound planning, implementation and monitoring. It is essential that project teams be granted access to international phone, fax and Email; and
- Project partnerships, including co-financing arrangements, should be formally established with a clear distribution of responsibilities among partners, as early as possible in the project design process.

Recommendation 3: Sustainability

131. Environmental, technical and economical sustainability of rural development efforts and achievements should be given greater attention in project design and implementation. In particular:

- Environmental components in IFAD projects should focus not only on reforestation and protection of sloping lands, but also on their sustainable and profitable use. An important part of the rural poor today live outside the CFs, and their uncontrolled cultivation of sloping lands constitutes an important threat to the environment and agricultural production in CF. IFAD and its partners should investigate ways to support this population group early on to develop sustainable agricultural production systems. On the other hand, CF members should be formally allocated plots on sloping land and receive advice on measures to avoid land degradation;
- The Government should consider the challenges of working the land and maintaining soil fertility in a context of very limited access to imported inputs, machinery and energy, as an opportunity for designing and developing alternative production arrangements. A sub-work team, by average size, composition and land holding, could be perceived as a group of small producers. Properly organized and endowed with adequate incentives, sub-work teams could evolve into highly motivated crop and livestock production groups within cooperative farm structures that would assume the function of credit providers and technical advisers to those independent producers' groups; and
- Several technical options to increase and maintain soil fertility on CF lands should be further explored by field trials and, if found adequate, disseminated widely for generalisation. Those

options include, among others: the introduction of fodder crops in crop rotations, allowing for the growth of cattle herds that provide manure for soil fertilization; liming in adequate quantities to reduce soil acidity which is a major limiting factor for agricultural productivity; and intercropping and conservation farming practices.

132. Although this recommendation mostly concerns project design and implementation, it could be initiated with the support of an IFAD grant, complemented by technical assistance from national and international rural development partners.

Recommendation 4: Household Credit

133. Considering its performance and important impact on income, food security and empowerment of rural households, the household credit scheme could be scaled up to all CFs in DPRK, possibly with the support of a new IFAD intervention. However, it would be necessary that:

- Loans are used to promote innovation and diversification of household level activities in accordance with Government policies. The expansion of credit activities, which could be achieved by an increase in individual loan ceilings, requires greater opportunities of individual economic activities (e.g. permitted area of individual crops per household, number and type of animals bred, small-scale agro-processing etc.);
- Savings be promoted. The Central Bank will ensure that the value of savings is safeguarded against economic measures such as administered price increases;
- The concomitant lending for small livestock to CFs, either through work teams or sub-work teams, remain an option, which may bear a significant potential for synergy with household economic activities.
- Credit to CFs and households is accompanied by sound technical, managerial and marketing advice; and
- The reporting system of CB towards the PMU and project partners be improved, and the bookkeeping system at farm level be standardized.

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Main Mission Itinerary and List of People Met

Mission Itinerary

Friday	4 April 2008	Mission members arrive in Beijing
Saturday	5	Beijing - Pyongyang
Sunday	6	Mission meetings with PMU, MoA
Monday	7	Morning: meeting with MoA, MoF, CB, MoLEP, NAAS Afternoon: mission visits WFP, SDC
Tuesday	8	Morning: mission visits PMU office Afternoon: mission visit FAO, EU
Wednesday	9	Departure delay by train; preparative work for field mission
Thursday	10	Further departure delay by train; meetings with PMU and CB
Friday	11	Travel to Ryanggang Province
Saturday	12	Travel to Ryanggang Province
Sunday	13	Gwanhung cooperative farm, Pungso county
Monday	14	Naepo cooperative farm, Pungso county
Tuesday	15	Upo cooperative farm, Pungso county
Wednesday	16	Sinjon cooperative farm, Samsu county
Thursday	17	Jungpyong project, Gwanpyong non-project cooperative farms, Samsu county
Friday	18	Start drafting Aide Memoire
Saturday	19	Departure to Pyongyang
Sunday	20	Arrival to Pyongyang
Monday	21	Sinhung, Rungsu cooperative farms, North Hwangae Province
Tuesday	22	Masan, Taul cooperative farms, Singye county
Wednesday	23	Hoam and non-project Dongsan farms, Goksan county
Thursday	24	Hyonam cooperative farm, Goksan county
Friday	25	Writing of Aide Memoire
Saturday	26	Writing of Aide Memoire
Sunday	27	Morning: first draft Aide Memoire sent to OE
Monday	28	Morning: OE comments collected and Aide Memoire finalized Noon: Meeting with GAA (NGO) and FAO
Tuesday	29	Submission to Government for translation
Wednesday	30	Morning: Meeting with Concern (NGO) Afternoon: Wrap-up meeting
Thursday	01 May	Mission departs from Pyongyang

List of People Met

Pyongyang

Ministry of Agriculture

Ms Kim Yong Suk Vice-Minister for Agriculture

Mr Ri On Ho, Coordinator, National Steering Committee to IFAD/FAO/WFP

Mr Kim Chol Hun, Officer for External Cooperation/Interpreter

Ministry of Finance

Mr Sin Song Jun, Director of Audit Department

Ms Kim Yong Suk, Officer, Audit Department

Ministry of Foreign Affairs

Mr Mun Jong Nam, Chief of Section, External Cooperation Department
Mr Ri Yong Ho, Senior Officer

Ministry of Land and Environment

Mr Ryu Kwang Chun, Senior Officer, External Cooperation Department
Mr Ri Song Il, Assistant Coordinator for multi-environmental agreements, External Cooperation Department
Ms Kim Jong Ok, Senior Officer

Project Management Unit

Mr Yun Ryong Chan, Director, Bureau of Project Cooperation (PMU)
Mr Ko Sung Chol, Director, Livestock Department
Mr Jon Sang Dal, Director, Sericulture Department
Ms Ri Sun Sik, Director, Finance Department
Mr Ju Jong Sop, Vice-Director, Sericulture Department
Mr Kim Song Ho, Vice-Director, Agro Department
Ms Ri Sun Hui, Senior Finance Officer
Mr Hyon Yong Hwa, Senior Financial Officer
Ms Li Young Su, Administrative and Finance Officer
Mr Jon Hak Chol, Planning Officer
Mr Bang Yong Il, Procurement Officer
Mr Ri Chol Un, Monitoring and Evaluation Officer/Interpreter

National Academy for Agricultural Sciences

Mr Pak Byong Hugh, Director, Soil Research Institute
Mr Kong Sin Ho, Director, Bio-sciences Research Institute
Mr O Chang Bom, Officer, Department of International Science and Technology Exchange
Mr Jong Dong Gon, External Affairs Officer

Central Bank

Mr Kun Byong Guk, Vice Director, Credit Department
Mr Kwang Young Duk, Chief, Credit Department
Mr Kim Hui Sam, Senior Officer, Credit Department
Mr Kim Gyong Ho, Officer, Credit Department

International Agencies

Ms Kathi Zellweger, Country Director, SDC
Mr Johan Ramon, Head of Agricultural Support Programme, SDC
Mr Urs Wittenwiler, Agricultural Advisor, SDC
Mr Jean-Pierre de Margerie, Country Representative, WFP
Ms Sawsan Rawas, Nutrition Specialist, UNICEF
Mr Kim Myong Hyok, Assistant Representative, FAO
Mr Michael Stapleton, Programme Coordinator, FAO
Mr Helmut Wolf, Technical Advisor, EuropeAid Cooperation Office, EU
Dr Karin Janz, Country Director, German Agro Action, EUPS 4
Mr Hugh Gollan, Managing Director, Korea Maranatha Sinyong Ltd.

Field Visits**Ryanggang Province**

Mr Yu Rin Ho, Chief, PMU
Mr Bang Yong Il, Procurement Officer, PMU

Pungso County

Ms Kim Un Suk, Chairman, Pungso County Cooperative Farm Committee

Mr Choe In Sok, Vice Chairman

Mr Ju Kyong Ho, Chief, Pungso County Branch Credit Section

Gwanhung Cooperative Farm

Mr Ri Ju Pil, Chairman, Gwanhung CF

Ms Ju Ryong Hun, Vice Chairman, Gwanhung CF

Mr Sim Song Hwa, Chief, Agriculture Processing, Gwanhung CF

Mr Kim Song In, Chief Accountant, Gwanhung CF

Naepo Cooperative Farm

Mr Ri KPW Se, CF Chairman

Mr Kim Song Su, CF Vice Chairman

Mr Ri Yong Bom, Chief Technician

Mr Pak Yong Son, Chief Accountant

Mr GKPW Yun Sam, Accountant

Upo Cooperative Farm

Mr Kim Yong Chol, CF Chairman

Mr Hong Su Yong, CF Vice Chairman

Mr Ku Chang Ryol, Chief Technician

Mr Yun Jong Bon, Chief Accountant

Samsun County

Mr Pak Pong Chol, County Chairman

Mr Jo Jong Ho, County Vice Chairman

Mr Ro Yong Su, Chief, County Branch, Credit Section, Central Bank

Sinjon Cooperative Farm

Mr Chae KPW Gun, CF Chairman

Mr Kim Myong Hwan, CF Vice Chairman

Mr Hwang Chang Hui, Chief Technician

Mr Ri Dok Kum, Chief Accountant

Ms Son Ryon Hwa, Accountant

Mr Sim Chang Ok, Manager, Potato Starch Centre

Jungpyong Cooperative Farm

Mr Kim Uk, CF Chairman

Mr Kang Chol Ung, CF Vice Chairman

Mr Yu Gwang Zae, Chief Technician

Mr Kim Jong GKPW, Chief Accountant

Gwanpyong Cooperative Farm

Mr Kim Sung Hak, CF Chairman

Mr Bang Chang Ryol, CF Vice Chairman

Mr Han Yong Gol, Chief Technician

Mr Kim Jung Son, Chief Accountant

North Hwangae Province**Syngie County**

Mr Yun Yong Nam, County Chairman

Sinhung Cooperative Farm

Mr Hwang Sang Gon, CF Chairman
Mr Kim Yong Sok, CF Vice Chairman
Mr Ri Chang GKPW, Chief Accountant

Rungsu Cooperative Farm

Mr Hwang Sang GKPW, CF Chairman
Mr Mun Yong Jin, CF Vice Chairman
Mr Choe Hwa Bong, Chief Technician
Mr Ryu Chang Gun, Chief Accountant

Masan Cooperative Farm

Mr Jong Il, CF Chairman
Mr Pak Il Ho, CF Vice Chairman
Mr Jong Pil, Chief Technician
Mr Dong Gyong Hun, Chief Accountant

Mr Kim Jong Su, Manager, Rice Milling Centre
Mr Kim Sok Chol, Production Officer, Rice Milling Centre
Ms Kim Jong O, Accountant, Rice Milling Centre

Taeul Cooperative Farm

Mr Kim Hak, CF Chairman
Mr Ri Song Gil, CF Vice Chairman
Ms Mun Yong Sil, CF Chief Accountant
Mr Kim Ri Bok, CF Chief Engineer
Mr Ri Song Gil, CF Officer

Goksan County

Mr Hwang In Ho, County Chairman
Mr Ri Sok Chol, Director of the Loan, County Branch, Credit Section, Central Bank

Hoam Cooperative Farm

Ms Ri Sun Ok, CF Chairman
Mr Kim Song Chol, CF Vice Chairman
Mr Kim Il Hwan, Chief Accountant
Mr Kim Myong Nam, CF Officer

Dongsan Cooperative Farm

Mr Kim Ryo Il, CF Chairman
Mr Ri Gyong Ho, Planning Officer
Mr Jo Jae Chol, Officer

Hyonam Cooperative Farm

Mr Ri Nung Hyon, CF Chairman
Mr Song Hyo Sop, Chief Accountant
Mr Ri In Chol, Accountant
Mr Kim Yong Chol, Officer
Mr Ham Yong KKPW, Officer

Mr Ra Du Song, Manager, Tricogramma Factory
Mr Choe Ryong Guk, Production Officer, Tricogramma Factory

Logical Framework of UFSP

	Performance Indicators	Data Sources	Assumptions
GOAL			
Balanced, sustainable and replicable cropping systems and environment management, which improve soil fertility and enable higher and more secure production to lead to improved living standards for 18,000 low-income households on 46 cooperative farms in upland areas	Farmer income by gender, directly benefiting 61,000 people at project completion. Nutritional status of children under five.	Household and farm baseline and repeat surveys Nutritional survey	
OBJECTIVES			
1. Improved crop rotations, farming practices and soil fertility, generating increased yield, income and labour productivity	Cooperative farms with new rotations: 24 farms in PY3 and 37 farms at project completion Area under recommended rotations: 12,000 ha in PY3 and 18,000 ha at project completion Yields of main crops for Class I land with tractor ploughing at project completion in tons/ha: potato single cropping 15; potato double cropping 12; rice double cropping 4.5; maize single cropping 2.4; maize double cropping 2.2; wheat single 2.5; wheat double 2.3; barley single 2.4; barley double 2.2; sweet potato single 15; sweet potato double 12; soybean single 1.0; and soybean double 0.9 Incremental crop production at the end of respectively project years 3 and 5 in MT/year: potato 3,800 and 7,300; maize 700 and 1,200; rice 5,100 and 9,100; wheat 2,700 and 4,800; barley 1,500 and 2,600; soybean 1,400 and 2,500 Farm income: farm cash income distributed to farm workers averages US\$600 per farm worker per year in PY3 and US\$900 at project completion (baseline is about US\$300)	Farm baseline and repeat surveys	Government takes all necessary steps to introduce recommended rotations Timely supply of appropriate crop
2. Greater availability to cooperative farms of high quality and disease free potato seed	Volume of high quality seed delivered to cooperatives	Cooperative farm annual reports	Government provides dedicated operating funds to NAAS Availability of appropriate storage and transportation facilities
3. Improved micro-catchment planning, fuelwood plantations and erosion control measures preserving and enhancing the environment	Number of catchment protected: catchments improved will cover 46 farms in 4 counties at end of project Area of woodlots: 5,400 ha at project completion Area of conservation forest: 2,400 ha at project completion	Farm baseline and repeat surveys	Government introduces catchment area zoning Timely availability of (seasonal) labour WFP food assistance uninterrupted
4. Credit services encouraging and enabling livestock and other enterprises by cooperatives and their farmer members	Volume of credit extended Number of loans extended: 18,000 per year as of PY3 Value of credit fund Household livestock income	Cooperative farm annual Reports Household annual repeat surveys	
5. Capacity of cooperative communities to select and undertake productive projects	Categories of projects selected Number of projects implemented	Cooperative farm annual reports	Government makes funds available to Cooperatives
6. Improved processing capacity adding value to crop production at cooperative farms	To be determined at feasibility study	To be determined at feasibility study	To be determined at feasibility study
7. Technical and managerial capacity of national, provincial and county agencies and cooperatives to plan and implement projects	Delivery of project inputs	Farm and household repeat baseline surveys Annual progress reports	Availability of TA assistance Adequate project supervision

Source: Appraisal Report (summarized)

UFSP - Environmental Protection Component
Evolution of Areas Planted for Fuel Wood and Timber Production

No.	Farms	Hectares planted	
		1999	2008
North Hwanghae Province		704.5	3,055.0
Singye County		278.0	1,620.0
1	Jongbong	35.0	150.0
2	Up	0.0	100.0
3	Masan	0.0	120.0
4	Taeul	32.0	115.0
5	Chongye	8.0	125.0
6	Rungsu	33.0	135.0
7	Chimgyo	0.0	150.0
8	Gurak	0.0	150.0
9	Gisok	0.0	125.0
10	Daepyong	0.0	120.0
11	Hwasong	32.0	130.0
12	Sinhung	70.0	100.0
13	Daesong	68.0	100.0
Goksan County		426.5	1,435.0
14	Pyongam	73.3	150.0
15	Songrim	0.0	100.0
16	Hoam	0.0	100.0
17	Sochon	0.0	110.0
18	Gyerim	70.3	100.0
19	Ryulri	73.3	140.0
20	Oripo	40.7	100.0
21	Mugal	4.2	100.0
22	Hyonam	73.3	130.0
23	Sahyon	0.0	160.0
24	Serim	30.9	110.0
25	Wolyang	60.5	135.0
Ryongyang Province		1,726.4	2,445.0
Samsu County		1,258.7	1,425.0
26	Jungpyong	127.5	130.0
27	Gwandok	102.3	105.0
28	Sinyang	86.0	100.0
29	Chonnam	66.1	100.0
30	Gwanryong	84.4	100.0
31	Gaeun	120.2	130.0
32	Samhung	100.0	120.0
33	Gwanhung	138.9	150.0
34	Dosang	120.5	125.0
35	Sinjon	114.6	115.0
36	Gwansaeng	82.5	100.0
37	Bonpo	115.7	150.0
Pungso County		467.7	1,020.0
38	Gwanhung	68.8	100.0
39	Naepo	84.5	220.0
40	Robong	60.4	100.0
41	Rimso	36.0	100.0
42	Guybok	47.0	100.0
43	Sinchang	37.0	100.0
44	Upo	48.5	100.0
45	Munjo	35.0	100.0
46	Sangri	50.5	100.0
Total		2,430.9	5,500.0

Note: The nine CFs with only partial project support are shaded.

Source: MoLEP

**UFSP - Comparison Between the UFSP Household Credit Component and
Typical Rural Household Credit Schemes**

UFSP Household Credit Component	Typical Rural Household Credit Schemes
Borrowers	
> 80 per cent women	<50 per cent women
<US\$3 daily income per family	>US\$10 daily income per family
All in one address, easy accessible	Remote areas, difficult to access
Bank savings >50 per cent of the loan	Bank savings <20 per cent of the loan
Income generating activities are limited	Income generating activities are unlimited
Freedom for entrepreneurial decisions is limited	Freedom for entrepreneurial decisions is not limited
Central Bank	Micro-Finance-Institution (MFI)
Has a national policy mandate for lending	Is not politically interested
Subsidized credit scheme	Not subsidized
Loan transfers to the account of the guarantor	Transfers on borrower's account or disbursed in cash to borrower
Recovers loan reimbursements from guarantor's account	Recovers from borrower
Does not analyse the individual borrower, neither knows him/her	Bank analyses intensively each applicant
Does not manage the application process	Manages the application process
Does not file the loan contract, which is kept with the guarantor	Keeps the loan contract on file
Loan	
Amount < 70\$	Amount > 100 \$
Loan period fixed for one year	According to cash flow projections
Interest is not cost covering	Interest is cost covering
No standard model contract	Standard model contract
Legal environment not important	Legal environment important
Low transaction costs by outsourcing main portfolio work to guarantor (CF)	High transaction costs
Loan Approval	
Application form is very simple	Application form is detailed
Application form is not important, often incomplete	Application form is the basis for lending
Few information is required	Extensive information is necessary
Guarantor is not assessed, he is known	Guarantor must be assessed
Creditworthiness of borrower is not important	Creditworthiness of borrower is decisive
Risk Assessment	
Guarantor assesses the applicant, not the bank	MFI assesses the applicant meticulously
High social pressure to pay back the loan	Frequent lack of "credit culture"
Market prices are fixed	Market prices are volatile
> 60 per cent of loan go into savings	< 20 per cent go into savings
Loan amounts are < 20 per cent of annual income	Loan amounts are > 30 per cent of annual income
Loan/investment monitoring is not routine	Loan/investment monitoring is routine
Loan Recovery	
No individual receipt for repayment	Individual receipt is compulsory
Paid back by guarantor	Paid back by borrower
Recovered by guarantor	Recovered by MFI
No default	Default rate > 5 per cent

Source: CB, PMU and evaluation mission

UFSP - Details of Community Facilities and Services

No.	County	CF	Value of construction material (US\$)	Construction or repair of:					
				Cultural centre	Kindergarten	Nursery	Clinic	School or study room	Other (bridge, threshing site)
1	Singye	Taeul	29,660	1		1		1	
2		Jongbong	22,600		1			1	1
3		Chimgyo	38,100	1		1		2	
4		Rungsu	36,600		1	1		1	1
5		Daepyong	44,040	1		1		3	1
6		Sinhung	34,200	1	1		1	2	
7		Masan	28,200	1		1	1		1
8		Chongye	24,500	1	1		1	1	
9		Hwasong	52,400		1	1		1	1
10	Goksan	Ruylri	31,100	1	1			2	1
11		Gyerim	24,600		1	1	1		1
12		Pyongam	25,740	1		1		2	1
13		Sochon	30,940	1	1		1	2	
14		Mugal	26,740	1	1	1			1
15		Hyonam	19,940	1		1		1	1
16		Songrim	14,320		1	1		1	1
17		Serim	24,180	1	1		1	1	
18		Wolhyang	40,240	1		1	1	3	
19	Samsu	Jungpyong	29,760	1	1			1	1
20		Gwandok	30,760	1	1		1	2	1
21		Chonam	23,940		1		1	1	1
22		Sinyang	25,240	1		1	1		1
23		Gwanhung	31,340		1	1		2	1
24		Bonpo	17,240			1	1	1	1
25		Ganryong	27,940	1	1		1	2	
26		Gaeun	16,520		1	1		2	1
27		Samhung	15,220		1		1	1	1
28		Sinjon	22,740	1		1	1	1	
29	Pungso	Gwanhung	31,600	1	1	1		2	
30		Naepo	46,800	1		1	1	3	1
31		Guibok	26,300		1		1	1	1
32		Robong	37,400	1		1		3	1
33		Upo	23,500				1		
34		Sangri	24,200	1	1		1	1	
35		Sinchang	20,500	1		1		1	1
36		Munjo	21,300		1	1	1	1	
37		Rimso	22,600		1	1		2	1
Project Total			1,043,000	23	23	23	19	51	24

Source: PMU

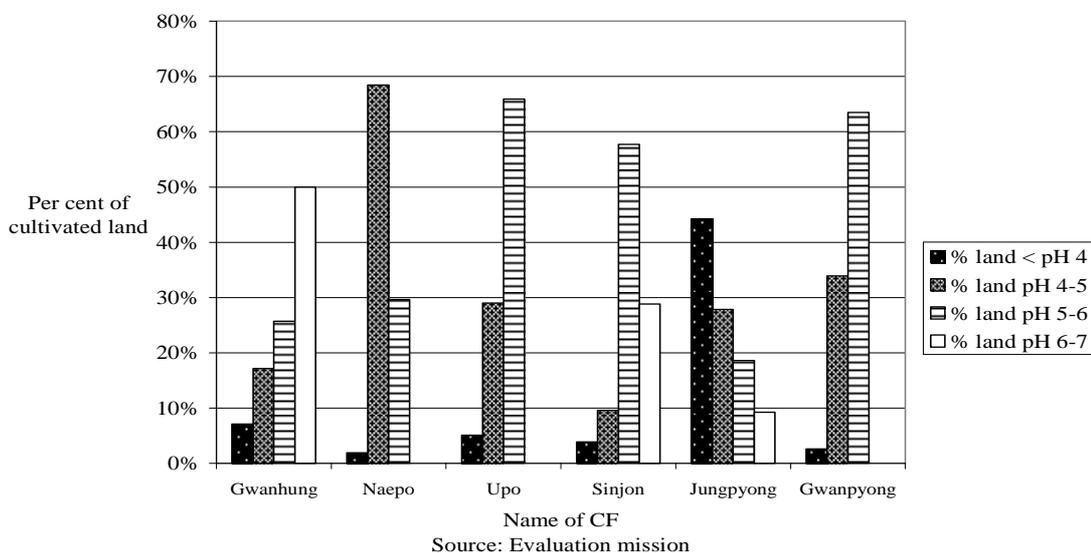
UFSP - Details of Farm Output Processing Equipment Procured

County	Item	Unit price (US\$)	Number	Amount (US\$)
Singye	Rice miller	8,500	4	34,000
	Oil extractor	4,200	7	29,400
	Noodle maker	1,500	4	6,000
	Feed crusher	1,655	6	9,930
	Miller	2,100	3	6,300
	Subtotal			85,630
Goksan	Rice miller	8,500	5	42,500
	Oil extractor	4,200	7	29,400
	Noodle maker	1,500	7	10,500
	Feed crusher	1,655	6	9,930
	Miller	2,100	3	6,300
	Subtotal			98,630
Samsu	Oil extractor	4,200	7	29,400
	Noodle maker	1,500	6	9,000
	Feed crusher	1,655	5	8,275
	Miller	2,100	5	10,500
	Potato starch extractor	38,500	2	77,000
	Subtotal			134,175
Pungso	Oil extractor	4,200	8	33,600
	Noodle maker	1,500	5	7,500
	Feed crusher	1,655	5	8,275
	Miller	2,100	5	10,500
	Potato starch extractor	38,500	2	77,000
	Subtotal			136,875
	Project Total			455,310

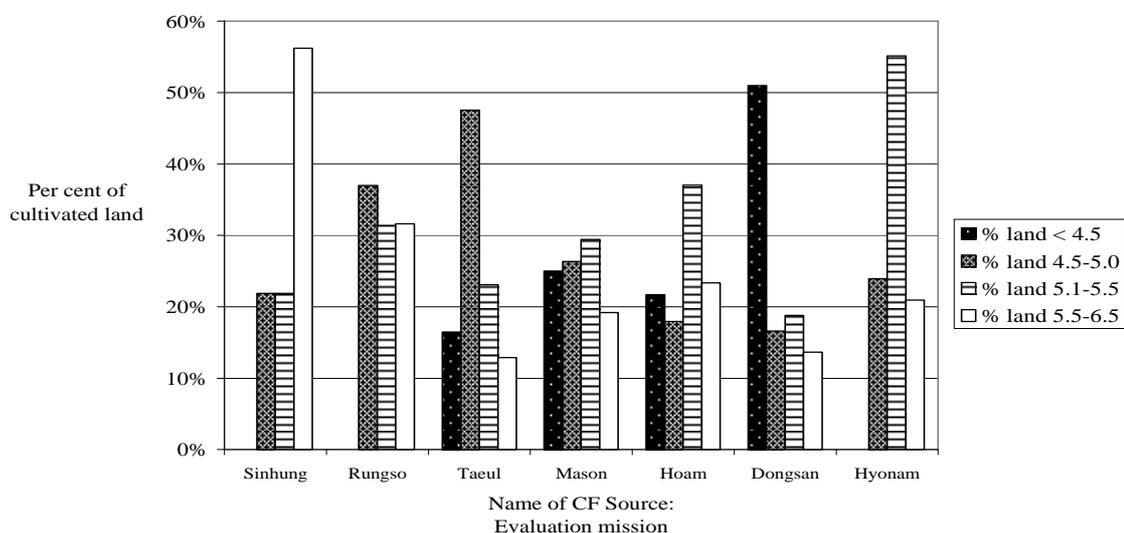
Source: PMU

UFSP - Selected Data on Soil Acidity, Organic Matter and Potassium and Phosphorous Levels
(Source: CF interviews and records)

Appendix 8-Figure 1. Comparison of pH Levels in Cultivated Soils of Cooperative Farms Visited in Ryanggang Province



Appendix 8-Figure 2. Comparison of pH Levels in Cultivated Soils of Cooperative Farms Visited in North Hwangae

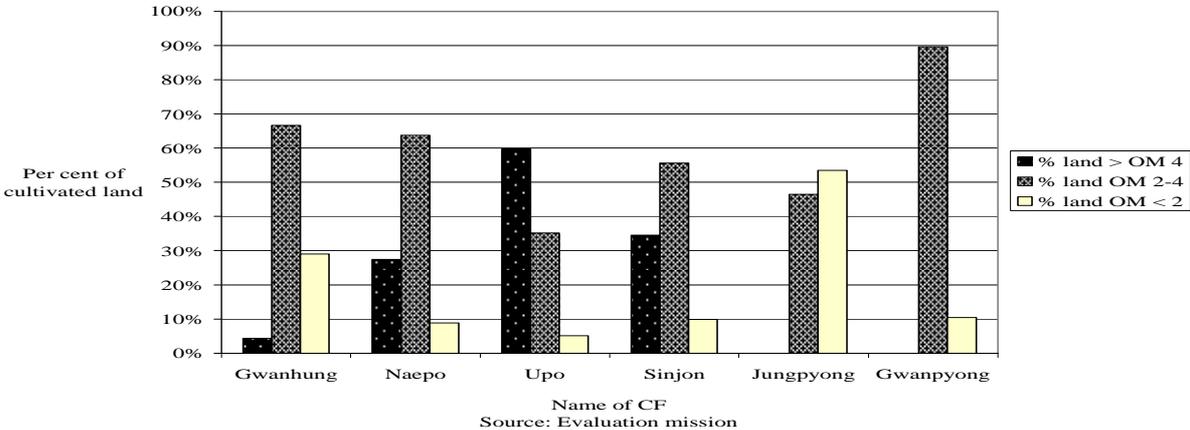


1. Phosphorus and potassium levels are generally medium to low and availability of both these and micronutrients will be adversely affected in the acidic soils ($pH < 5$). Provision through the project of greater quantities of chemical fertiliser has been appreciated and led to increased production. However, the focus on chemical fertilisers is likely to have exacerbated the underlying problem of increased acidification of the soil, even though compound fertiliser was planned to be provided in greater quantities than urea. In reality, the effectively procured fertilisers showed in inversed ration (see Table 3). Results of liming trials show significant increases in yield of maize with application of

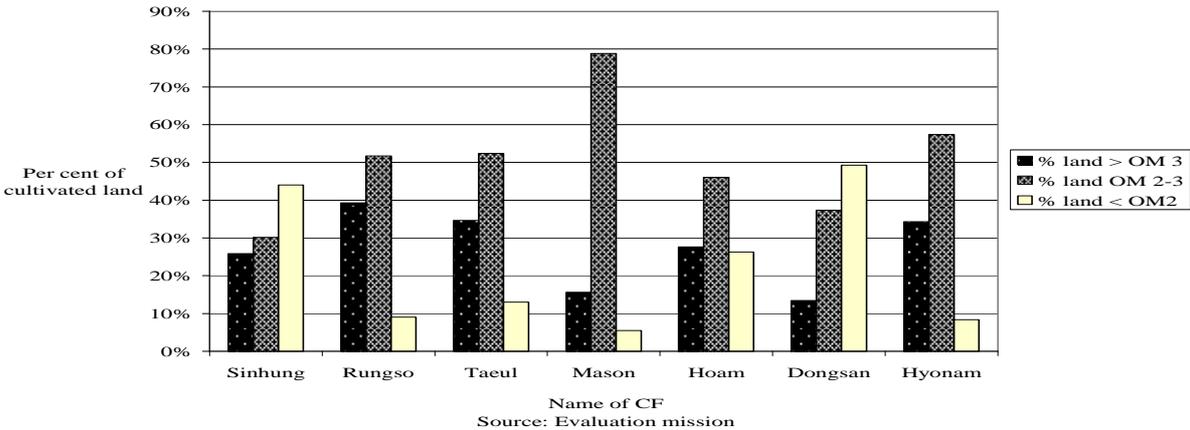
2-3 MT/ha of lime (24-25 per cent increase in maize yield, of 1.15 and 0.7 tonnes per hectare)¹. With the value of maize at 20,000 KPW/MT and lime at 60-70 KPW/MT, returns to liming are significant. Mobilisation of significant quantities of lime (2-3 MT/ha) would have a synergistic effect with fertiliser application and potentially enable significant yield increases, without increasing fertilisation rates. Availability and transportation costs for lime are given as constraints to implementation, although there are reportedly adequate lime sources within county.

2. With high levels of acidification in soils in both Ryanggang and North Hwangae province (47 per cent and 42 per cent of cultivated area less than pH 5)², liming at rates of at least 5 t/ha would seem essential on these soils. Rates of only 2 t/ha are recommended for the most acid soils (pH 4-4.5) and a mere 1 t/ha for acid soils (4.5-5.0)³. While different crops have different requirements and different types of soil respond in a different manner, at these levels of liming, significant impact is unlikely in such acid conditions. Even with low application rates of 1 and 2 tons per hectare, cooperatives often state that they do not have the resources to apply even this amount. A trend of increasing acidification is reported, despite relatively high levels of organic matter, in most cooperatives (Figures 3 and 4).

Appendix 8-Figure 3. Comparison of Organic Matter Content of Soils in Cooperative Farms visited in Ryanggang Province



Appendix 8-Figure 4. Comparison of Organic Matter Content of Soils in Cooperative Farms visited in North Hwangae Province



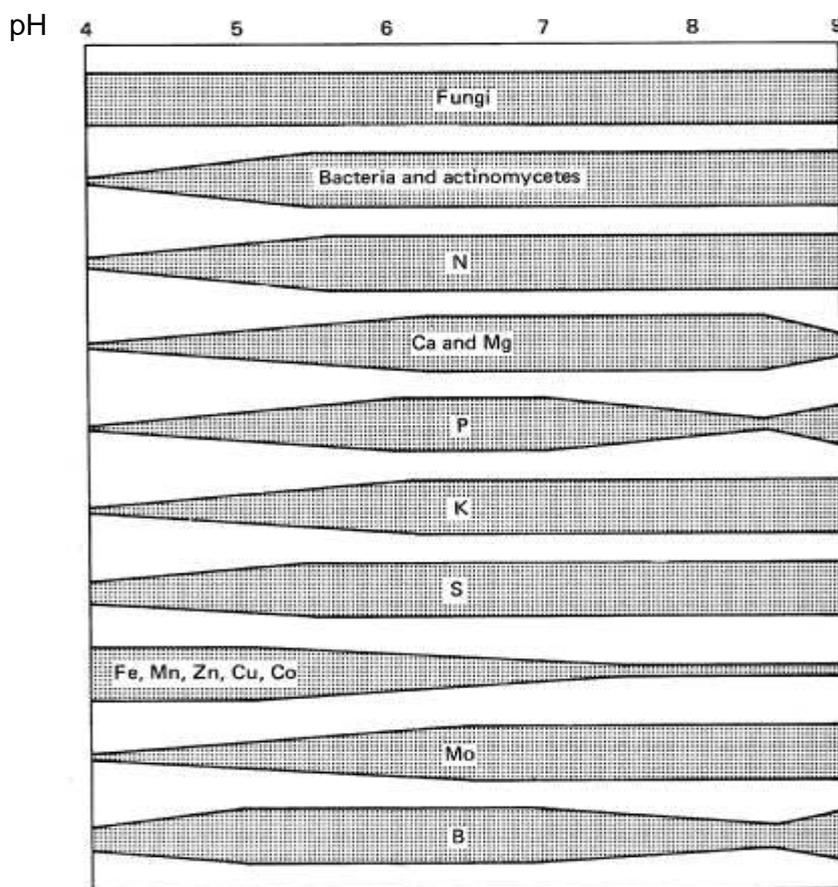
¹ As reported by Hyonam cooperative (25 per cent increase with 2 MT lime addition to acidic soils) and Hoam (24 per cent increase with 3MT lime addition to acidic soils).

² In sample of 6 (Ryanggang) and 7 (North Hwangae) cooperatives visited by the mission, with combined cultivated areas of 3,910 and 4,210 hectares respectively.

³ Supplied by the Direct of the Soil Research Institute, NAAS and confirmed by cooperative chairpersons.

3. Figure 5 visualises the relationship between soil pH and plant availability of nutrients and prevalence of bacterial and fungal life in the soil.

Appendix 8-Figure 5. Changing Availability of Key Nutrients and Micro-organism Activity with Soil Acidity



Source: www.agry.purdue.edu/Ext/forages/publications/ay267.htm

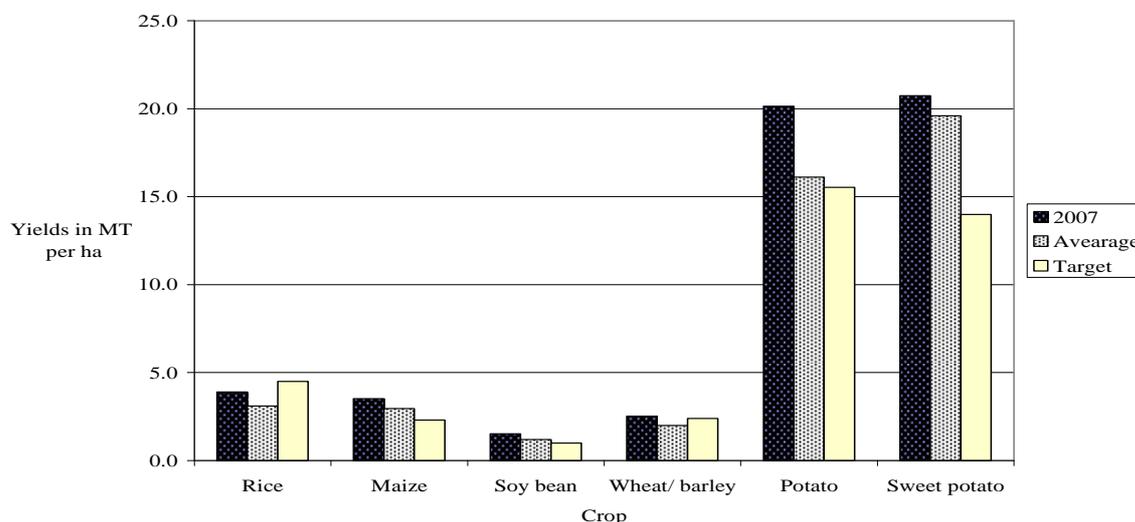
4. In view of these data, the mission finds it surprising that soil acidity was not perceived as relevant crop productivity constraint and consequently integrated into the sustainable crop production systems component. No other donor, except SDC, appears to identify soil acidity in DPRK as a major problem. With FAO, only one reference to low soil pH has been found⁴, stating that: “Considering the amount of fertilizer that is applied to rice and maize, especially in the Cereal Bowl, yields remain low. The mission suspects that the acidity of the soils may be a contributory factor. Farm soil analyses are carried out every three years, and several farm chairmen cited soil pH levels of between 4.5 and 5.5. Chairmen are generally well aware that such low pH values represent a severe constraint to crop production, and attempt to remedy it by applying lime. However, most are limited, by lack of transport, to applying about half a tonne of lime per hectare every three years, which they acknowledge is insufficient. In a highly acid soil environment, nutrient elements are immobilised and made unavailable to the plant with the result that applied fertilizer has minimal effect; in the case of urea, applications may even increase the acidity of the soil. The Mission recommends that this issue be investigated and that consideration be given to facilitating the application of lime, chiefly through provision of transport from quarry to farm, in order to ensure that applied fertilizer is effectively utilised.”

⁴ FAO/WFP: Crop and Food Supply Assessment Mission to the Democratic People’s Republic of Korea, Special Report, 22 November 2004.

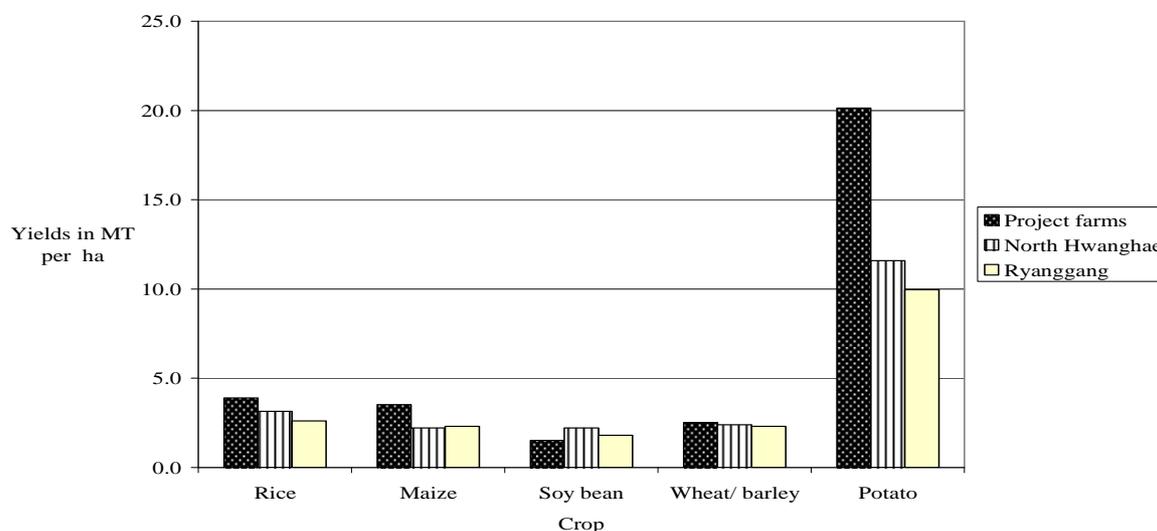
UFSP - Crop Yield and Production Targets and Achievements

1. Data in this Appendix are pooled from the CF database maintained by the PMU, covering the 37 CFs with full and the nine CFs with partial project support. It has to be noted that the figures provided for yields from 2002 to 2007 show surprising uniformity in terms of gradual increases from year to year. Climate data provided by the PMU from stations in Ryanggang and North Hwanghae suggest that the cropping seasons 2006 and 2007 were unusually dry in Ryanggang and very wet in North Hwanghae in 2007, with floods reported also by the PCR. It is unusual not to see fluctuations both up and down depending on weather conditions while the orders of magnitude of yields reported appear to be feasible under average climatic and other conditions. Figure 1 below compares the end-of-project targets of the selected crops against the average yields obtained 2002-2007, and the yields of the final project year, 2007. Crop yields per hectare have reached the target in all crops except rice by 2007. Indeed, the targets have been attained also compared to average effective yields per hectare (2002-2007) in all crops except rice, wheat and barley.

Appendix 9-Figure 1. Major crop yields achieved in 2007 on the 37 CFs with full project support, compared to 2002-2007 means and targets at appraisal



Appendix 9-Figure 2. Comparison of major crop yields on the 37 CFs with full project support with provincial averages for 2007



2. Figure 2 infers that the 37 CFs with full project support overshoot provincial average yields in 2007, with the exception of soybeans, while Figures 3 and 4 show that yields in the 37 CFs with full support, compared to yield of the nine CFs with partial support increased, grew to higher levels.

Figure 3. Yields of Major Crops in MT/ha, 2002-2007, 37 CFs with Full Project Support

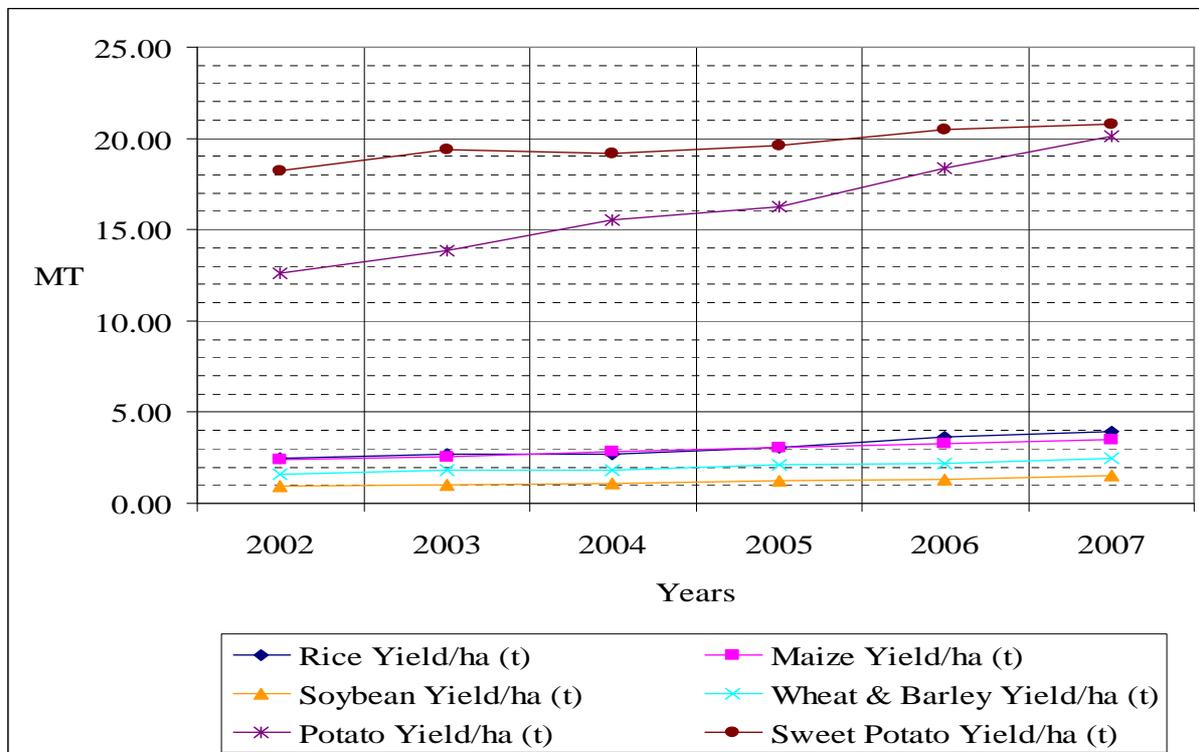
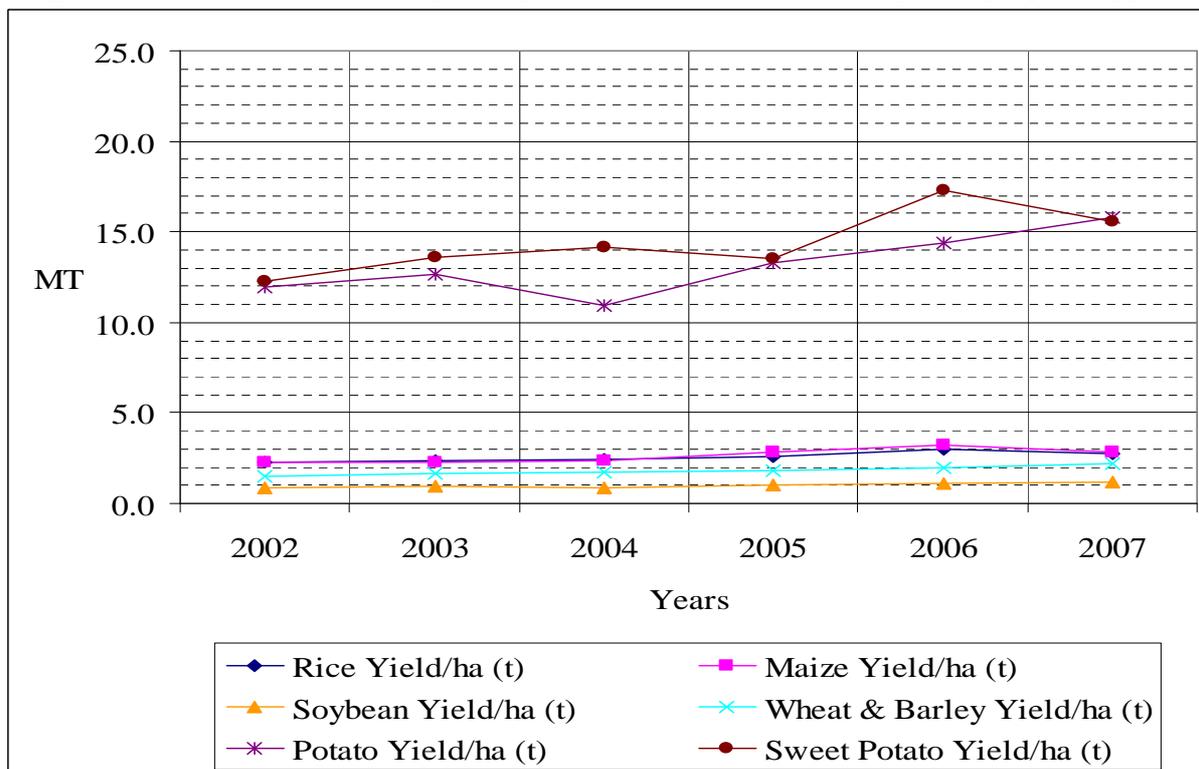


Figure 4. Yields in MT/ha of major crops, 2002-2007, Nine CFs with partial project support



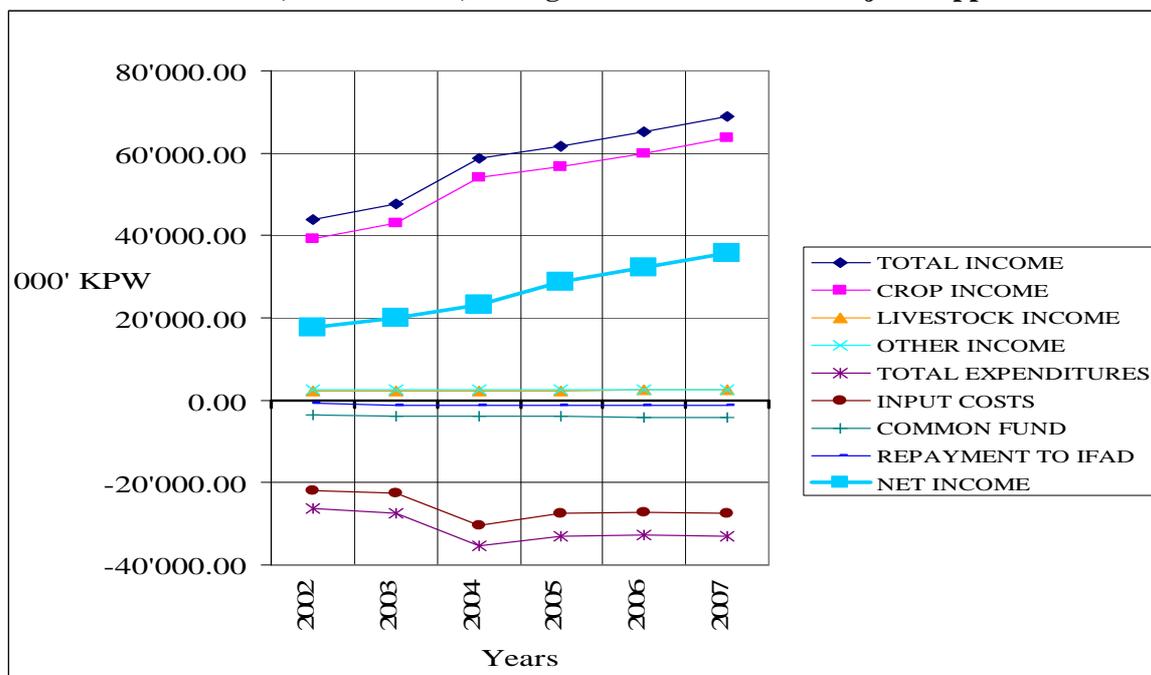
3. Performance indicators also refer to incremental crop production at the end of project years 3 and 6 in MT/year¹. This is taken to mean the increase in crop production in these years compared with yields at the start of the project. Initial yields are taken as the ones recorded in 2002, due to the incomplete nature of the 1999 figures.

4. Despite substantial increase in yield per hectare of all major crops in the 37 CFs with full project support, incremental crop production at the end of project years 3 and 6 was below target for rice (643 versus 5,193 MT; 4,350 versus 9,442 MT), soybean (979 versus 1,427; 1,845 versus 2,791 MT) and wheat/ barley (- 3,271 versus 4,245 MT; 584 versus 7,824 MT; due to significant decrease in acreage of 1,646 ha between 2002 and 2007). In other crops, targets were exceeded, particularly in potato (52,976 versus 3,802 MT; 41,165 versus 7,639 MT) and maize (5,036 versus 738 MT and 12,376 versus 1,343 MT) where both crops have seen an increase in acreage (248 ha and 1,456 ha respectively).

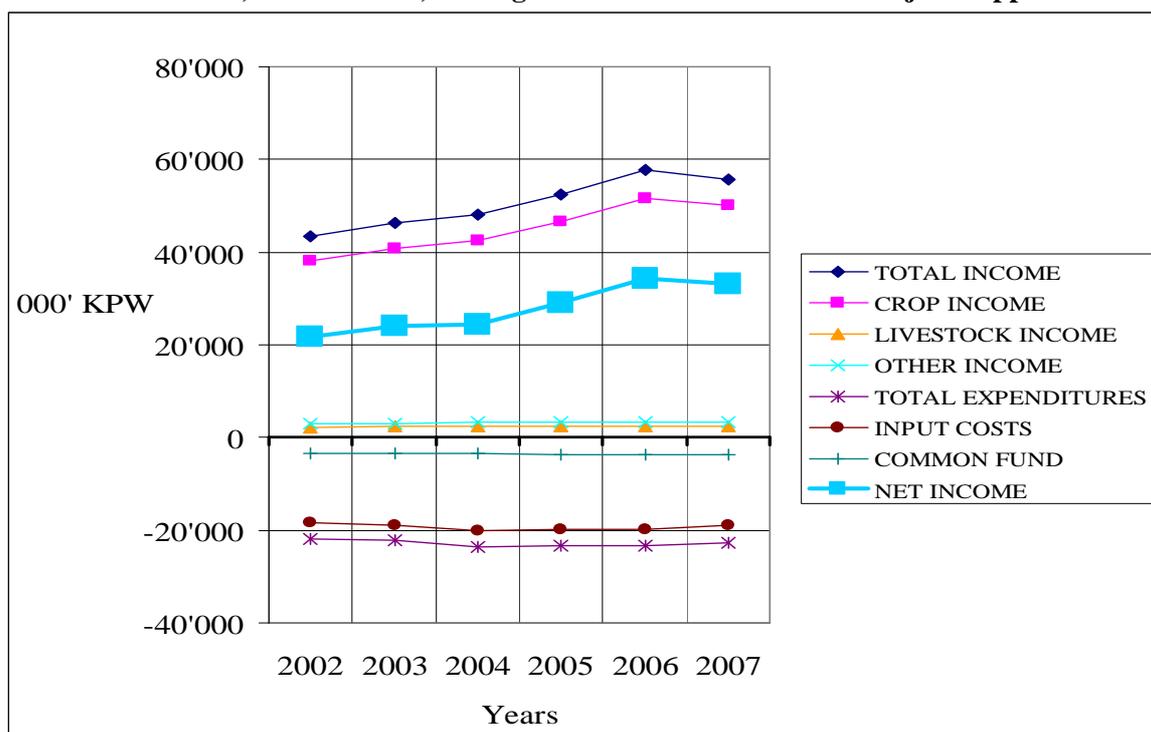
¹ IFAD, Democratic Peoples' Republic of Korea, Upland Food Security Project, Appraisal Report, Report No. 1502-KP, Rome October 2000, paragraph 137.

UFSP - Financial performance indicators of the 37 CFs with full and nine CFs with partial project support, 2002-2007 (Source: CF database)

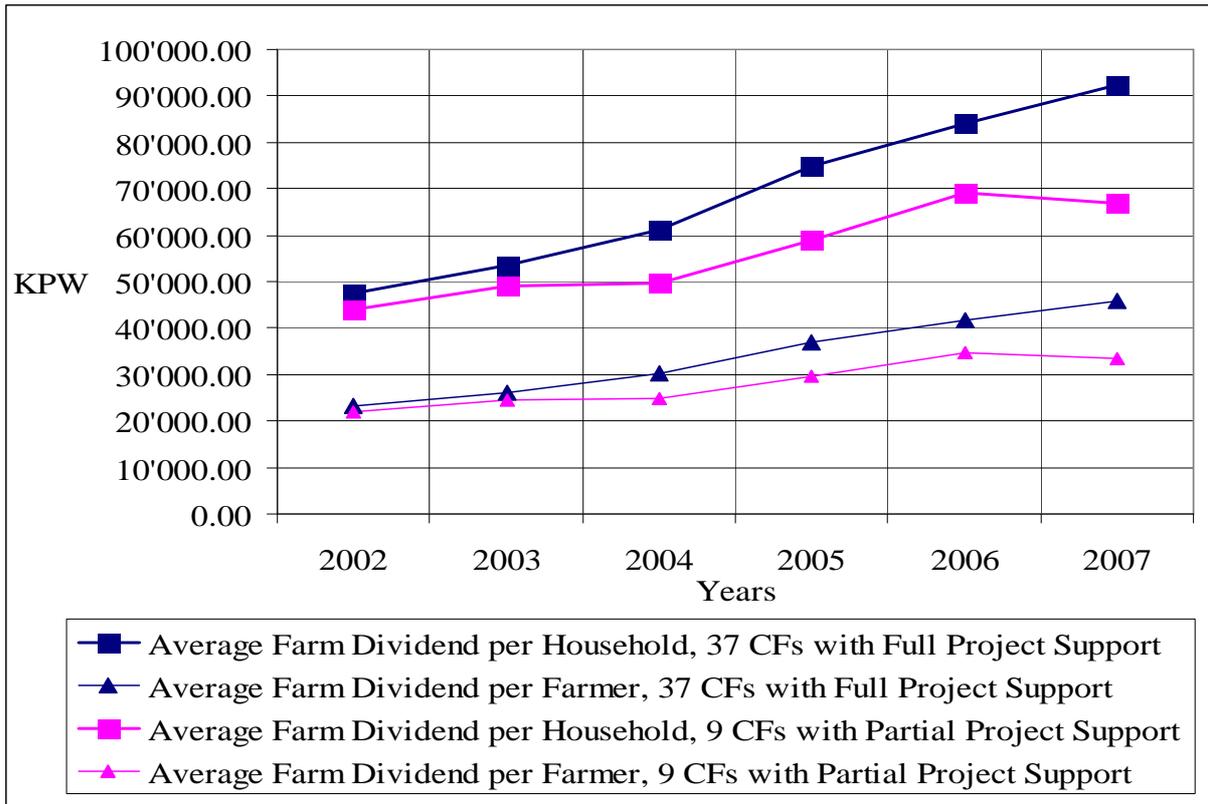
Appendix 10-Figure 1. Trends in Average CF Income and Expenditures by Categories, 2002-2007, in '000 KPW, average of 37 CFs with full Project Support



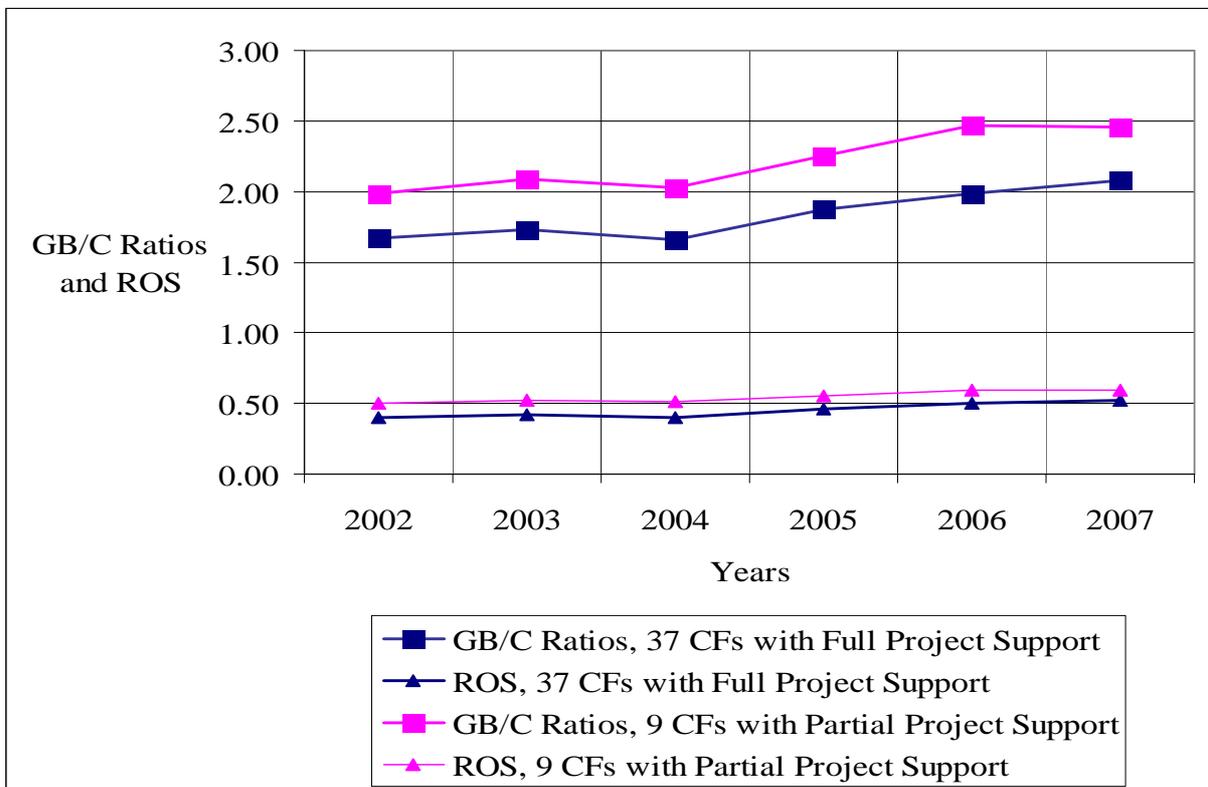
Appendix 10-Figure 2. Trends in Average CF Income and Expenditures by Categories, 2002-2007, in '000 KPW, Average of Nine CFs with Partial Project Support



Appendix 10-Figure 3. Trends in Average Farm Dividends per Household and Farmer, 2002-2007, in KPW, 37 CFs with Full and Nine CFs with Partial Project Support

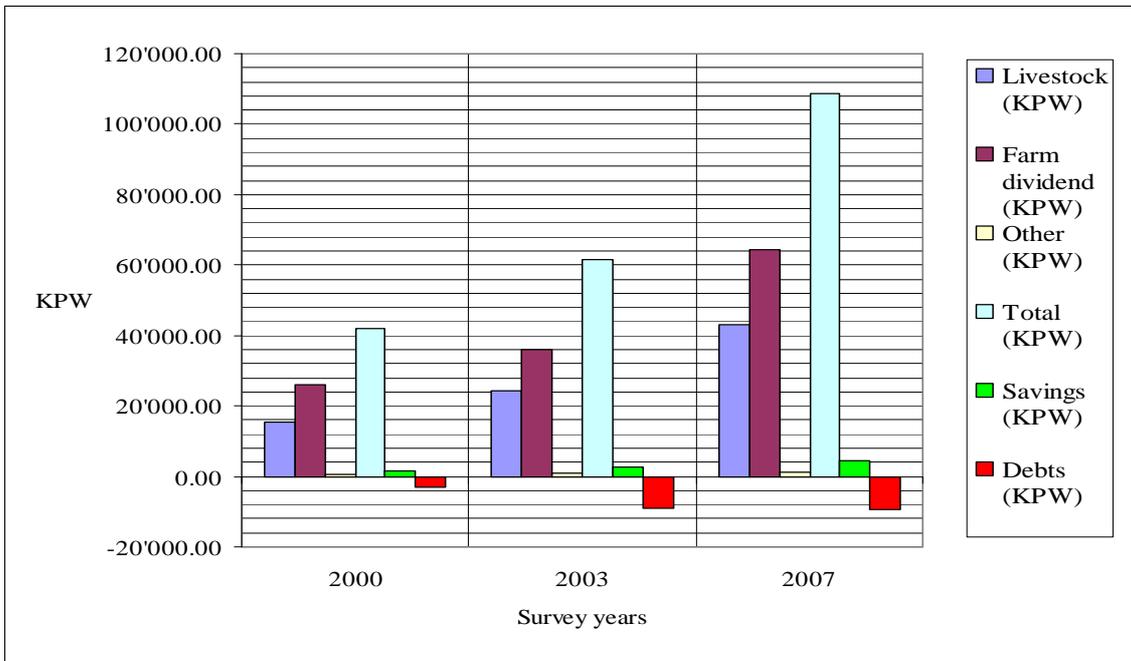


Appendix 10-Figure 4. Gross Benefit to Cost (GB/C) Ratios and Returns on sales (ROS), 2002-2007, 37 CFs with Full and Nine CFs with Partial Project Support

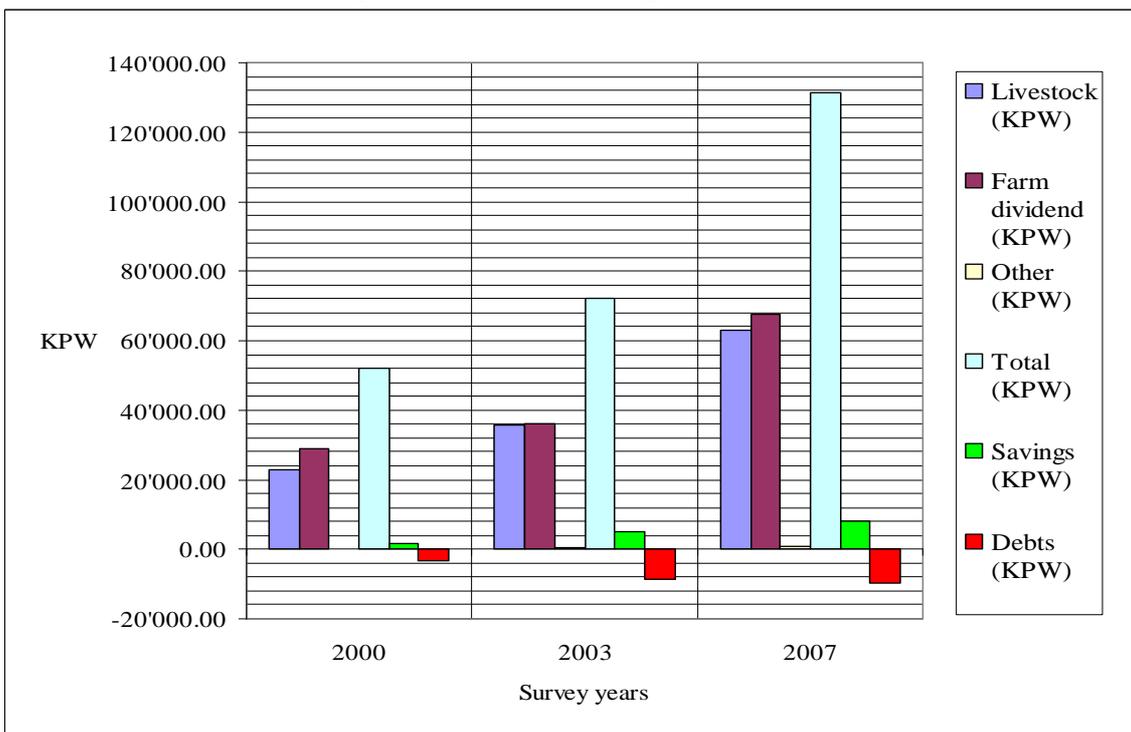


**UFSP - Trends in Average Household Incomes by Sources, 2000, 2003, 2007,
37 CFs with Full Project Support (Source: sample household surveys)**

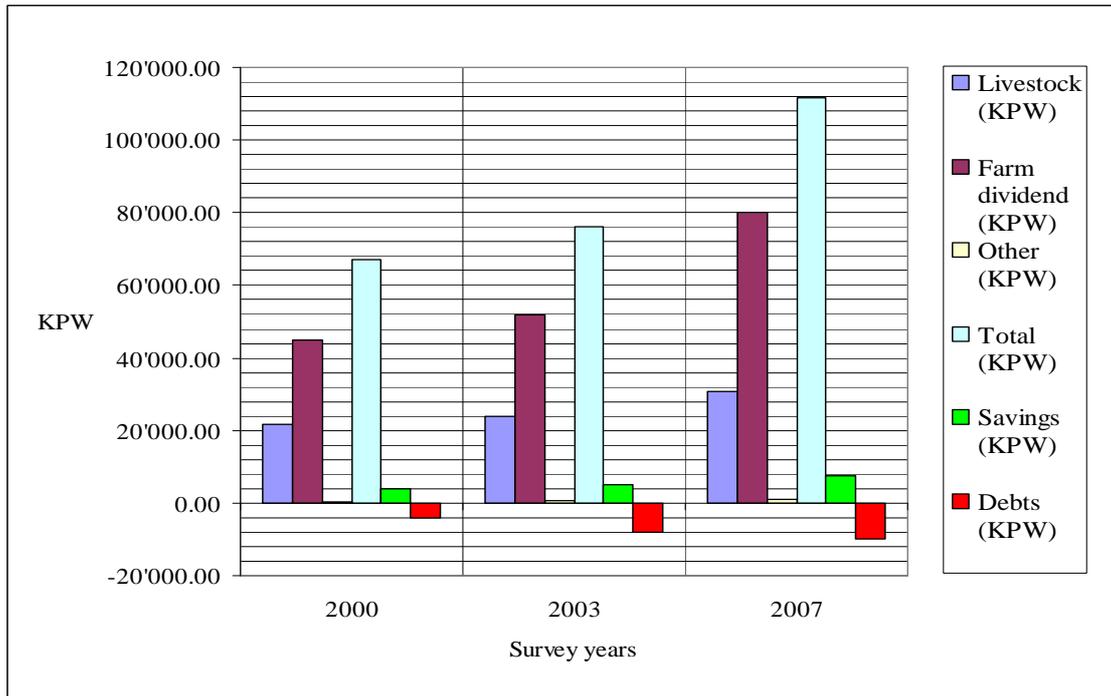
**Appendix 11-Figure 1. Singye County - Trends in Average Household Income
by Sources and in Savings and Debts**



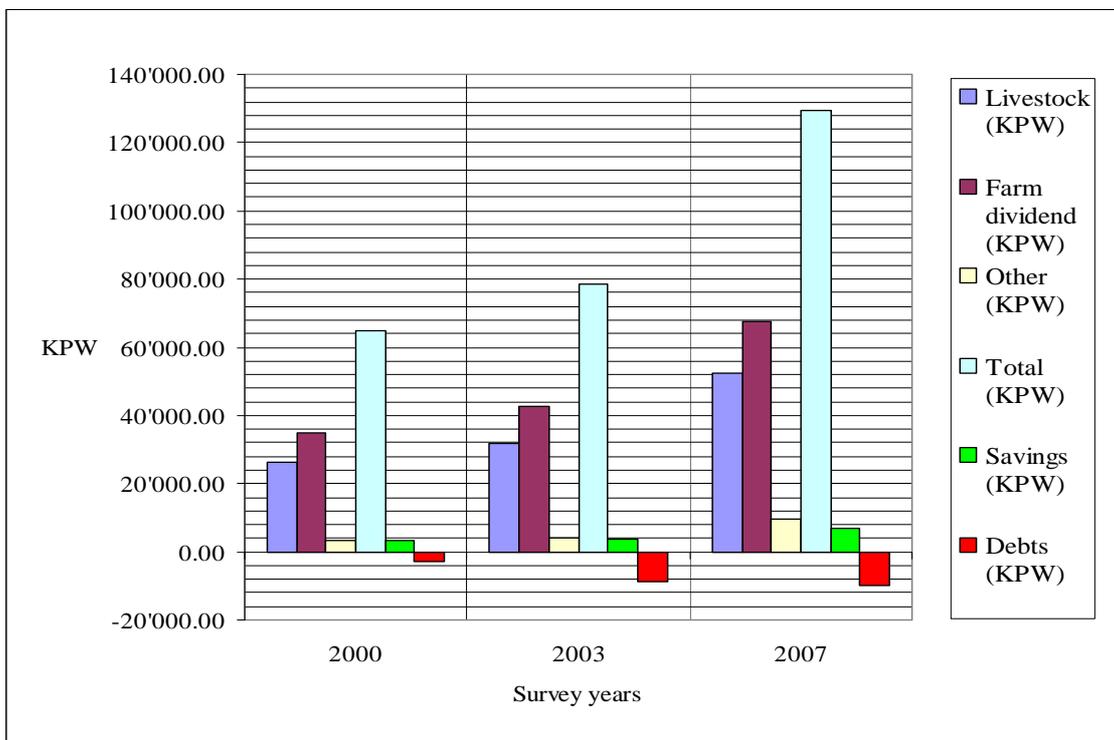
**Appendix 11-Figure 2. Goksan County - Trends in Average Household Income
by Sources and in Savings and Debts**



Appendix 11-Figure 3. Samsu County - Trends in Average Household Income by Sources and in Savings and Debts



Appendix 11-Figure 4. Pungso County - Trends in Average Household Income by Sources and in Savings and Debts



UFSP - Drawings made by CF Household Members

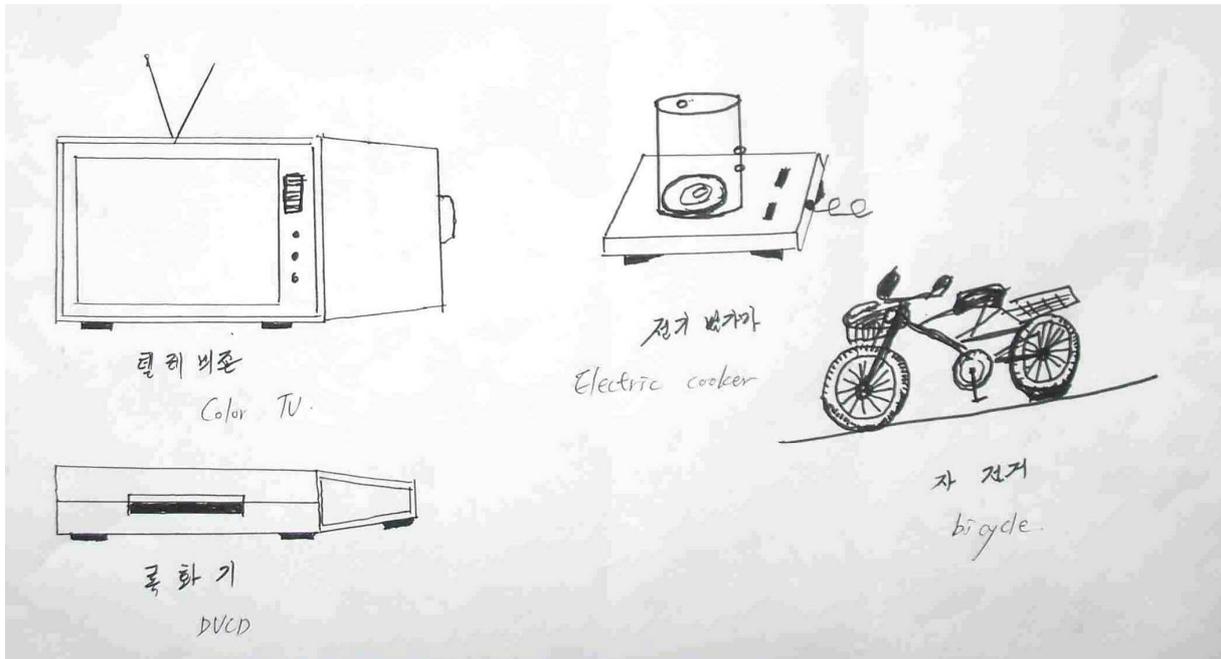


Past changes perceived by Mr Park Jong Sok, Hoam CF, North Hwangae Province



Future improvements desired by Mr Park Jong Sok, Hoam CF, North Hwangae Province

UFSP - Drawings made by CF household members (2)



Past changes perceived by Ms Kim Sol Mi, Yungpyong CF, Ryanggang Province



Future improvements desired by Ms Kim Sol Mi, Yungpyong CF, Ryanggang Province



Enabling poor rural people
to overcome poverty

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