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Democratic People's Republic of Korea

Interim evaluation of the Uplands Food Security Project

Executive summary

Evaluation Committee — 55th Session
Rome, 8 April 2009

For: **Review**

Note to Evaluation Committee members

This document is submitted for review by the Evaluation Committee.

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Abbreviations and acronyms

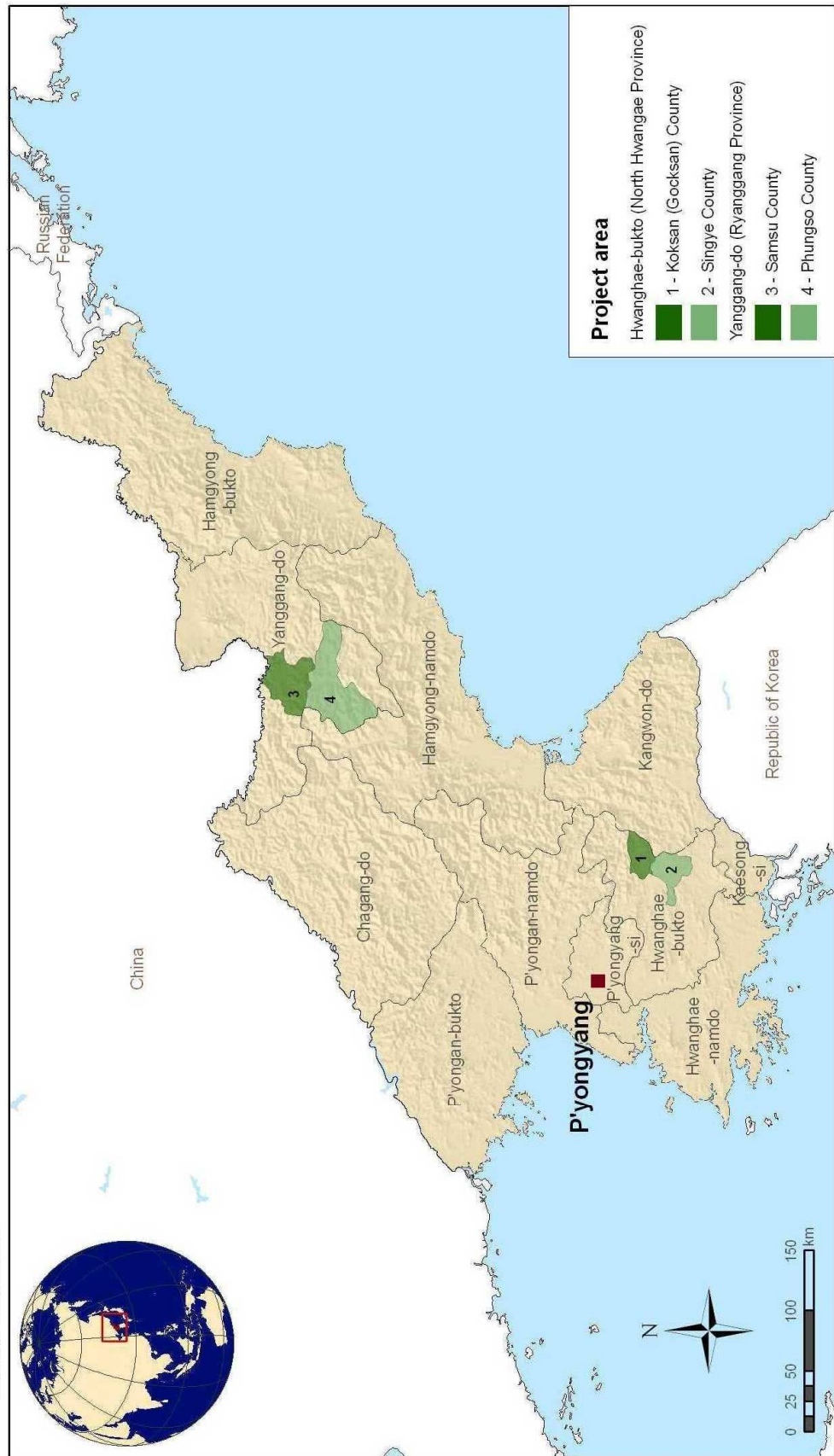
CCFMC	county cooperative farm management committee
CESVI	Cooperazione e Sviluppo (Italian NGO)
COSOP	Country strategic opportunities paper
FAO	Food and Agriculture Organization of the United Nations
KPW	D.P.R. Korea won
NAAS	National Academy of Agricultural Sciences
OE	Office of Evaluation
PMU	project management unit
UNDP	United Nations Development Programme
UNOPS	United Nations Office for Project Services
WFP	World Food Programme

Map of the project area

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.

Map compiled by IFAD



Democratic People's Republic of Korea

Interim evaluation of the Uplands Food Security Project

I. Introduction

A. Country background

1. The Democratic People's Republic of Korea covers an area of 122,762 square kilometres and has an estimated population of 23 million people.¹ According to the most recent estimates, in 2004 it had a GDP per capita of US\$546, with an annual growth of 4.2 per cent. Agriculture was estimated to account for 18.4 per cent of GDP. The sector went through collectivization in the mid-1950s, which brought about mechanization, the use of chemical inputs and a national irrigation network. Cooperative farms, approximately 3,000 today, and state farms were created at that time. The modernization of agriculture doubled crop yields up to the mid-1980s. Agricultural productivity has since fallen due to, among other factors, overuse of chemical fertilizers, soil acidification and widespread monocropping of staple crops, particularly on marginal lands. With the collapse of the Soviet Union in 1990, the Democratic People's Republic of Korea ceased to have privileged markets and access to cheap energy and other key inputs, which also affected the high-input agriculture practised until then.
2. Between 1995 and 1997, recurrent droughts and flooding exacerbated the situation, leading to widespread famine. The country had to rely on World Food Programme (WFP) food aid until 2005 when it declared that no further emergency aid was needed but development assistance would be accepted.² With less than 20 per cent of its land suitable for agriculture, pressure on sloping land and forests continues to be substantial. Since 1990, the country has lost 20 per cent of its forest area; some 10 per cent of the national food supply is estimated to originate from deforested sloping lands, while the official agricultural production apparatus exclusively relies on state and cooperative farms.
3. With reduced support from neighbouring socialist countries and scarce availability of imported inputs since the early 1990s, the national strategy and overriding philosophy of self-reliance (*Juche*) has been revived with regard to agricultural policies. More attention is now given to selecting crops that have greater potential in light of the soil characteristics and seasonal and climatic conditions across the country. Focus has moved to improved seeds, intensified production with double cropping and use of organic fertilizers, biofertilizers and biopesticides that can be produced in-country. Mechanization is still seen as an important priority as are the expansion of irrigated areas and reduced reliance on power for irrigation.³ Input supply and collection of agricultural produce for distribution through the public distribution system or export are state-managed.
4. In July 2002, the Government of the Democratic People's Republic of Korea operated an economic policy shift on many levels that affected the implementation and impact of the IFAD-funded Uplands Food Security Project. More specifically, cooperative farms were granted more autonomy in production planning, which facilitated the introduction of new crop rotations under the project's sustainable crop production systems component. However, the national currency, the D.P.R. Korea won (KPW), was devaluated by a factor of 65 against the United States dollar, and administered prices and wages adjusted by a factor ranging from 30 to

¹ The country has not published official statistics for the past 30 years. Most of the statistics presented in this report are taken from the 2007 country profile of the Economist Intelligence Unit, which, in turn, draws on data produced by research centres in the Republic of Korea.

² Since 2005, WFP has continued to provide relief assistance in response to sudden emergencies and natural disasters, including the August 2007 floods.

³ Agricultural policy document provided in translation by the project management unit on 1 May 2008.

80. The credit revolving fund financed by IFAD under the project was not adjusted accordingly, and therefore lost most of its value (see paragraph 39). Cooperative farm household cash reserves or bank accounts were not adjusted either, which resulted in a near cancellation of household debts and savings.

5. IFAD is currently the only international financial institution lending to the Democratic People's Republic of Korea.⁴ Since the beginning of its operations there in 1995, which coincided with the onset of a severe food crisis, IFAD has financed three projects in the country for a total loan amount of US\$69 million. The Sericulture Development Project was implemented from 1996 to 2002 and the Crop and Livestock Rehabilitation Project from 1997 to 2003. The country strategic opportunities paper (COSOP) produced in 2000 stated that IFAD operations should concentrate on reviving production in the disadvantaged uplands with a focus on specific geographic areas, cooperative farms and households within those farms.

B. The project

6. The Uplands Food Security Project was formulated and appraised in 2000 and approved by the IFAD Executive Board in December of the same year. The loan became effective in April 2001 and closed in December 2008 after two extensions. The Ministry of Agriculture was the project's executing agency.
7. At appraisal, the estimated total project cost was US\$41.77 million. The IFAD loan of US\$24.44 million was provided on highly concessional terms. A further US\$4.44 million was to be provided by the Government, US\$7.18 million by international cofinanciers – WFP, the Food and Agriculture Organization of the United Nations (FAO), the United Nations Development Programme (UNDP) and Cooperazione e Sviluppo (CESVI), an Italian NGO – and US\$5.71 million by beneficiaries. The United Nations Office for Project Services (UNOPS) acted as IFAD's cooperating institution and was responsible for loan administration and project supervision.
8. The project's goal was to improve living standards for 18,000 low-income households (61,000 persons) on 46 cooperative farms in upland areas by introducing balanced, sustainable and replicable cropping systems and environmental management. These systems would improve soil fertility and enable higher and more secure agricultural production. The project had seven components, which corresponded to the project's seven specific objectives (table 1).

⁴ The Democratic People's Republic of Korea is neither a member of the World Bank nor the Asian Development Bank.

Table 1
Summary of project objectives, intervention strategies and cost percentages, by component

<i>Component</i>	<i>Specific objective</i>	<i>Intervention strategy</i>	<i>Percentage base cost</i>
Sustainable crop production systems	Improved crop rotations, farming practices and soil fertility, generating increased yield, income and labour productivity	Assist cooperative farms in introducing sound crop combinations and sustainable farming systems, providing models for demonstration to other cooperative farms	55
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
Environment preservation	Improved microcatchment planning, fuelwood plantations and erosion control measures preserving and enhancing the environment	Support tree planting, bunding, rudimentary terracing and the construction of storm drains	31
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
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
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
Project implementation support	Technical and managerial capacity of national, provincial and county agencies and cooperatives to plan and implement projects	Provide support to the project management unit, provincial rural economy committees and county cooperative farm management committees in carrying out their roles	4

Source: Appraisal report

9. The project area included 46 cooperative farms in four counties. Two of these counties, Samsu and Pungso, are in Ryanggang Province, in the far north of the country. The other two counties, Singye and Goksan, are located in North Hwangae Province, south-east of the capital. Of the 46 cooperatives, 37 were involved in all components, and 9 were included only in the environment preservation and household and cooperative credit components.
10. The project was implemented by a project management unit (PMU), which was part of the Bureau of Project Cooperation of the Ministry of Agriculture. The PMU was located in P'yongyang. Most project activities were implemented directly by the cooperative farms, under guidance of the county cooperative farm management committees (CCFMCs) and in collaboration with national partner institutions such as the Central Bank (for the household and cooperative credit component), the Potato Research Institute (potato seed supply development component) and the Ministry of Land and Environmental Protection (environment preservation component).

II. Evaluation objectives, methodology and process

11. The interim evaluation of the Uplands Food Security Project was requested by the Executive Board as part of the annual work programme and budget of the Office of Evaluation (OE) for 2008. According to the IFAD Evaluation Policy, an interim evaluation by OE is mandatory before the Fund's Programme Management Department designs the subsequent phase of the project, eventually to be financed by IFAD. The evaluation of the project was conducted by OE from January to November 2008.

12. The evaluation had two main objectives: (i) to assess the project's performance and impact; and (ii) to generate a series of findings and recommendations for a subsequent project phase and/or other new projects and programmes financed by IFAD in the country. The evaluation adopted the latest methodology for project evaluations developed by OE. This included focusing on assessing the: (i) performance of the project, measured in terms of relevance, effectiveness and efficiency;⁵ (ii) rural poverty reduction impact according to five impact domains⁶ (household income and assets, human and social capital and people's empowerment, food security and agricultural productivity, natural resources and the environment, and institutions and policies); (iii) overarching criteria of sustainability and innovation, replication and scaling up; and (iv) performance of the partners, including IFAD, the Government, UNOPS and other financial and implementation partners. Each of the above-mentioned criteria has been rated on a six-point scale.⁷
13. The evaluation contained three distinct phases: (i) the preparatory phase, which entailed the writing of the approach paper, recruitment of the evaluation team, and a desk review of available documents; (ii) the fieldwork phase, which consisted of a preparatory mission in January 2008, and the main evaluation mission in April 2008; and (iii) the report-writing phase, which entailed data and information analysis, report preparation and discussion of evaluation findings and recommendations during a stakeholder workshop held in P'yongyang on 27 November 2008. During the fieldwork phase, the mission held talks in P'yongyang with Government partners such as the Ministry of Agriculture, including the PMU, the Ministry of Finance, the Ministry of Land and Environmental Protection, the Central Bank and the National Academy of Agricultural Science (NAAS). The mission also met development agencies and donors, e.g. WFP, FAO, the United Nations Children's Fund (UNICEF), the Swiss Agency for Development and Cooperation, and the European Aid Coordination Office. The evaluation team travelled to Ryanggang and North Hwangae Provinces, accompanied by officials of CCFMCs and Central Bank branches. The mission visited 13 cooperative farms, six in Ryanggang Province and seven in North Hwangae Province. The mission independently chose the cooperative farms and households that it would interview.⁸

III. Implementation results

14. **Sustainable crop production systems.** The core element of the component was the introduction of sound crop rotations on 18,000 hectares of land in the 37 cooperative farms with full project support, through the supply of crop inputs such as fertilizer and pesticides, the provision of mechanization packages and farm management support. The project has procured about 20,000 metric tons of fertilizer and 366 metric tons of pesticides. The types of fertilizer procured – urea, and nitrogen, phosphorus and potassium fertilizers – deviated from what was proposed at appraisal, with an important increase in nitrogen content. Farm input supply was halted in 2005, on the basis of a mid-term review recommendation, as the fertilizer procured by the project was not systematically applied to the soil classes foreseen and the project inputs mostly replaced inputs formerly obtained by

⁵ "Relevance" is defined as the extent to which project objectives are consistent with: the needs of rural poor people; IFAD's Strategic Framework and policies; and the country's current policies and strategies for poverty reduction. The assessment of relevance also covers the internal coherence of design (quality of the logical framework, choice of approaches and activities) and adequacy of resources to meet the project's objectives. "Effectiveness" is defined as the extent to which project objectives were achieved at project completion. "Efficiency" is a measure of how economically inputs (funds, expertise, time, etc.) were converted to outputs.

⁶ "Rural poverty impact" is defined as the intended or unintended changes in the lives of rural poor people – as perceived by them and their partners at the time of the evaluation – to which the project's interventions have contributed.

⁷ Ratings are given on a scale from 1 to 6, with 6 = highly satisfactory, 5 = satisfactory, 4 = moderately satisfactory, 3 = moderately unsatisfactory, 2 = unsatisfactory and 1 = highly unsatisfactory.

⁸ The cooperative farms and households were selected on the basis of a stratified random sampling. The stratification criteria used for cooperative farms were the geographical location (county) and the average dividend paid out per worker as an indicator of labour productivity. The stratification criterion used for households was household composition (man- or woman-headed, and number of dependants per worker).

cooperative farms from other sources. The evaluation found that the type of fertilizer procured actually exacerbated prevailing soil acidity, an issue not addressed at project design. Farm machinery, such as tractors, ploughs, potato planters, trailers and sprayers, was successfully supplied to the cooperative farms, however, without taking into account the poor maintenance capacity of the cooperative farms and their difficulties in procuring spare parts and tyres, for lack of hard currency. Farm management support was provided through training, coaching and study tours for CCFMCs and cooperative farms. During the first project years, this support was marred by an overly prescriptive approach and inappropriate crop rotation plans, because of both misinterpretation of unclear instructions in project design and the lack of involvement of cooperative farm staff and national scientists. This situation was rectified after the mid-term review when NAAS became more involved and cooperative farms were given training and authorized to design their own crop rotation systems within the framework of certain principles.

15. **Potato seed supply development.** This component addressed the lack of virus-free quality 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 cooperative farms. NAAS specialists were actively involved in implementation.
16. **Environment preservation.** Under supervision by the Ministry of Land and Environmental Protection, 5,500 hectares of fuelwood plantations for 46 cooperative farms have been planted and/or replanted against a target of 5,400 hectares. This was possible, despite the very limited funding from WFP in the form of food-for-work (see paragraph 25). The Ministry also reports having undertaken bunding, terracing and construction of storm drains for the protection of 1,200 hectares of sloping land, which represents 50 per cent of the target at appraisal.
17. **Household and cooperative credit.** The Central Bank 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 cooperative farms that raised small livestock, which was outsourced for further rearing and/or fattening to the households in a given cooperative farm. In total, more than 45,000 households benefited from loans, with a balance of 17,000 outstanding loans by end-2007, i.e. on a par with the appraisal target. Based on this success, the project funds allocated to this component were doubled during project life, and the portion earmarked for cooperative farm credit was raised to 50 per cent. However, the revolving fund for household and cooperative farm loans was not adjusted in the wake of the 2002 reforms (see paragraph 4). A reallocation of US\$2.23 million of remaining loan funds, mainly from the emergency and public works fund expenditure loan category,⁹ to the household credit revolving fund was agreed one month before project completion.

⁹ This loan category was created by a loan amendment in April 2005, mostly by a reallocation from loan category 2 – crop inputs. This emergency and public works fund was intended to finance public works to boost household income and employment generation in years of low crop yields, or crop inputs in critical shortage situations.

18. **Community facilities and services.** This component was implemented from 2006 onwards only, on the basis of training for PMU and cooperative farm staff in participatory rural appraisal. The delay was caused by the absence of UNDP funding intended for an NGO to train cooperative farm managers and members in participatory planning tools, following a shift in UNDP's country strategy.¹⁰ Because of the Government's reluctance to finance international technical assistance out of loan proceeds,¹¹ it was only when IFAD agreed to provide a grant in 2006 that training could take place with the help of an international consultant and the component could successfully be implemented. Cooperative farm management and members were enabled to prioritize community facilities and services and to submit respective subprojects to the PMU. The project funded building materials for 163 community facilities, ranging from cultural centres, kindergartens, clinics, bridges and threshing sites.
19. **Farm output processing.** 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 the purpose 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.
20. **Project implementation support.** With an allocation of US\$1.48 million at appraisal, the PMU was in a position to manage the procurement of machinery, equipment and supplies, and to assure their distribution through the established Ministry of Agriculture channels. Nine short-term technical assistance missions were conducted over the life of the project, which was significantly less than planned due to CESVI, FAO and UNDP financing not being fully tapped for these inputs, and the above-mentioned reluctance of the Government to finance international technical assistance out of loan proceeds. Training on monitoring and evaluation, procurement, environmental planning, whole farm planning and project reporting were financed by UNDP; WFP financed technical assistance on food-for-work project assistance planning; and IFAD financed technical assistance on participatory rural appraisal and agroprocessing. Only the very last technical assistance mission, on financial management, was financed from the IFAD loan. In terms of monitoring and evaluation, the PMU was successful in conducting a household survey with repeats on the same household sample at regular intervals, and in establishing a database on the performance of the participating cooperative farms. However, the PMU had considerable difficulty in obtaining timely and comprehensive project information from the partner institutions, especially the Central Bank. This made the task of the evaluation mission particularly challenging. As at 31 May 2008, US\$35.45 million, or 84.9 per cent of the original financial allotment, had been used. At loan closing (31 December 2008), the IFAD loan was 100 per cent disbursed. Implementation support provided by IFAD and UNOPS to the PMU is discussed under IFAD and UNOPS performance (paragraphs 50 to 53 and 57 to 58).

IV. Project performance

A. Relevance

21. It is fair to say that the project design was consistent with the Government's agricultural and rural development policy. Considering the extent of rural poverty in

¹⁰ As per the President's report, the estimated UNDP contribution of US\$0.55 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". In the end, UNDP provided only US\$0.22 million during the first project years for PMU office equipment, an overseas tour to Thailand to study sustainable farming and to Germany to study credit (four persons), and a few international technical assistance missions (procurement and environmental planning, and whole farm planning).

¹¹ This despite the fact that an additional covenant of the loan agreement stated that, in the event that UNDP could not provide funding, the borrower would request that the missing amount be reallocated from category IX "unallocated" to category V "training and studies".

the country, the goal of enhancing household incomes and food security in cooperative farms located in marginal upland areas remained relevant throughout the project's life. However, the case may be made that the poorest and most vulnerable people in rural areas today may not be living on cooperative farms.¹²

22. Project design was also consistent with the COSOP and included learning from previous IFAD-funded projects in the Democratic People's Republic of Korea. As the COSOP was prepared precisely at the time between project formulation and appraisal, there was a clear cross-fertilization between the COSOP and project design. The evaluation notes, however, that policy dialogue was not given due consideration in project design, although it was expected that the project would "serve as a vehicle for gradual policy, institutional and technical change in the country". The appraisal report integrated relevant inputs from the IFAD internal quality-at-entry assurance processes at the time.
23. However, considering the design missions' limited access to both primary (obtained through fieldwork and stakeholder meetings) and secondary information (through documentation review), it is not surprising that project design documents largely present the official line and remain somewhat superficial in terms of analysis of the root causes of rural poverty, constrained agricultural productivity, environmental degradation on sloping lands, and so on. As a result, the technical orientations of the project's main component, sustainable crop production systems, were partly inappropriate and did not address three main issues, namely the lack of farm machinery maintenance capacity, the need for alternative agronomic solutions to substitute imported inputs, and widespread soil acidity.
24. 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 Province. The environment preservation component, aiming mainly at reforestation and erosion control on sloping lands, foresaw relevant field interventions. Farm cooperative management expressed keen support for the planting of fuelwood plots, finding it preferable to the previous system of periodic wood collection from different areas as assigned by the Ministry of Land and Environmental Protection. The component did not, however, consider promoting sustainable use of sloping lands, although in all appearances since the mid-1990s the livelihoods of an increasing part of the rural population depend on the productivity of those lands. The household and cooperative credit component was intended to tap the talents of households 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 into this component. The community facilities and services component was designed and implemented by successfully using participatory rural appraisal methods.
25. Overall, project partnerships were weakly developed during project design, both with national and international institutions. The involvement of cofinanciers was well intentioned, but inadequately prepared and not secured by formal agreements between the borrower and the cofinanciers, as foreseen in the loan agreement. The most serious case was that of WFP, which was supposed to provide food-for-work in favour of the environmental protection component. It only provided 8.7 per cent of the US\$6 million promised, apparently because the PMU did not file any additional requests following correct procedure and because of serious communication constraints between WFP and the PMU. Finally, project design did not take into account the communication difficulties between the PMU and IFAD and other

¹² 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 households' food requirements are probably poorer and more vulnerable as they have neither shelter nor social and land tenure security.

international development partners, which still prevail today (see also paragraph 54).

26. All in all, the evaluation concludes that the project's relevance was moderately satisfactory.

B. Effectiveness

27. 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 directly to IFAD impact domains.¹³ As such, these aspects will be treated under section VI.
28. Overall, the project 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 29 and 30) and some environmental management (see paragraph 31). Soil fertility was less improved than expected (see paragraph 29) but agricultural production increased significantly (see paragraph 43).
29. **Sustainable crop production systems.** 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 cooperative farms (on 31,000 hectares against a target of 18,000 hectares) 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. 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. 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.
30. **Potato seed supply development.** According to the project completion report, 12 million disease-free potato minitubers were produced during the project life and provided to project farm cooperatives. The required number of quality potato tubers has apparently achieved area coverage, as verified by the mission in Pungso County of Ryanggang Province. Improved seed is also available for households' private plots. The objective of greater availability to cooperative farms of disease-free quality potato seed has been fully achieved.
31. **Environment preservation.** Activities were delayed both by structural coordination problems involving the project, the Agriculture and the Land and Environmental Protection Ministries and WFP, and by the lack of WFP funding. A small programme, for which WFP delivered a total of 1,145 tons of food under food-for-work activities, was successfully implemented in 2003. However, in the end, the target of 5,400 hectares of wood lots was overshot, thanks mainly to contributions from the Land and Environmental Protection Ministry and cooperative farms. Survival rates were reported to be 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 hectares. In short, the objective of planting fuelwood plots was achieved, but other erosion control measures were only partly implemented.
32. **Household and cooperative credit.** The credit component was implemented effectively by the Central Bank and cooperative farms, with zero default rates and for the anticipated number of beneficiaries by end-2007. At the time of the

¹³ 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.

evaluation, the revolving credit fund amounted to about US\$2.28 million. A total of 47,671 loans were underwritten to households to purchase animals and feed, with an average loan amount of US\$65. All 46 cooperative farms have benefited twice from loans on three-year terms for a total amount of US\$1.05 million. 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.

33. **Community facilities and services and farm output processing.** The participatory planning approach for community investments introduced by the project was successfully applied, and all 37 cooperative farms 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 the capacity of cooperative communities to select and undertake productive projects has been achieved. A number of cooperative farm managers said they would use participatory planning again in the future for prioritizing community investments. The project also succeeded in improving the 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.
34. Summing up the above, the evaluation found the project's overall effectiveness to be satisfactory.

C. Efficiency

35. Evaluating project efficiency in economic or financial terms in the Democratic People's Republic of Korea 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 evaluation mission, but efficiency was addressed in other terms.
36. The time lags between project inception and Executive Board approval – one year – and between Board approval and loan effectiveness – 3 months – were exemplary, as was the case for the two former projects in the country. However, unlike the two former projects, which were completed within the timeframe estimated at appraisal, the project required a two-year extension.
37. 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. The main reasons for the 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 (FAO, UNDP and WFP) 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 mid-term review recommended a one-year extension of the project's closing date. The project suddenly shifted gears, by allowing cooperative farms to prepare their own crop rotation plans and field trials with guidance from NAAS scientists and CCFMCs, and by mobilizing IFAD grant funds for further technical assistance 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) procure farming supplies internationally for about US\$1.5 million, to be sold to cooperative farms, the revenue of which would be allocated to the household credit revolving fund with the Central Bank; (ii) benefit from technical assistance in financial management; and (iii) bring its financial records up to standard.

38. 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 perceived low end-user efficiency, due to the limited plant nutrient availability in acid soils and the downtimes of agricultural machinery for lack of spare parts and poor machinery maintenance capacity. This was to the detriment of the participating cooperative farms, which 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 administered prices that were substantially below economic prices.
39. An estimated US\$1.2 million of project financing for the household and cooperative credit component was lost following the administered price adjustment of 2002 without adjustment of the revolving fund.¹⁴ 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 the Democratic People's Republic of Korea.¹⁵
40. In conclusion, the evaluation found project efficiency to be moderately unsatisfactory.

V. Rural poverty impact

41. **Household income and assets.** Household income and assets increased significantly over project life for about 20,000 households in the participating 46 cooperative farms. In all four counties, average livestock income, farm dividends and total income increased on average by about 100 per cent or more from 2000 to 2007. The appraisal target of US\$900 per farm worker at project completion was not, however, achieved.¹⁶ Both monetary savings and debts (household credits) increased over time, more markedly for credits than for savings, which appear mostly under the form of household appliances. The latter is explained by the limited opportunities for households to reinvest cash income in productive assets, as current government policy restricts individual economic activities in cooperative farms, and the risks related to monetary saving (see also paragraph 4). The progressive increase of income and assets was not accompanied by a significant increase in income or asset base disparity. There is also no significant difference between income and assets of woman-headed households and those of man-headed households.
42. **Social capital and empowerment.** The project has contributed to improving the management capacity and performance of cooperative farms, which provide a social safety net to an important portion of the rural population and appear to function in a democratic and relatively transparent manner. Households have no doubt proven their capability to assume risk in individual economic activities assisted by household credit. Entrepreneurial freedom remains, however, limited, not least by the impossibility of physical business expansion due to a 100 m² individual land plot limit. Devoting extra time to quasi-entrepreneurial activities with adequate personal reward appears to have unleashed talent as much as enthusiasm and has important

¹⁴ The same occurred with the household credit revolving fund of the IFAD-funded Crop and Livestock Rehabilitation Project.

¹⁵ According to *Foreign Policy*, June 2007 (http://www.foreignpolicy.com/story/cms.php?story_id=3880), the parallel market exchange rate of the KPW to the US\$ was estimated at over 2,500 to 1, much higher than the official exchange rate of 140 to 1.

¹⁶ According to both the PMU-maintained cooperative farm database, average annual income per farm worker in 2007 reached somewhat more than US\$300, roughly twice the 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.

non-monetary implications, in particular the empowerment of women, who were the main household credit borrowers.

43. **Agricultural productivity and food security.** Agricultural productivity increased over the project's life in both the 37 cooperative farms with full project support and the 9 cooperative farms with partial project support, although more markedly in the case of the former. In cooperative farms with full support, rice, potato and soybean yields increased on average by about 45 per cent between 2002-03 and 2006-07, and maize, wheat and barley yields by about 40 per cent.¹⁷ The cooperative farm managers met attribute persistent productivity gains of 20 per cent to improved crop rotations alone. However, incremental production targets were met only for potatoes and maize. Provision of virus-free and quality seed potatoes has played a major role in enabling the increases in potato production. Household interviews by the evaluation confirmed that, thanks to the credit component, food security at the household level had improved. Households had been able to increase income from individual activities and cooperative farm dividends, enhancing their access to more nutritious foodstuffs. Because of the larger number of animals reared or fattened, households could also increase their intake of animal protein and lipids.¹⁸ Improvements could also be inferred from anecdotal evidence: the mission observed that, although about one third of children aged five to seven in kindergartens appeared to be stunted,¹⁹ no child was underweight.
44. **Natural resources and the environment.** Apart from wood production, afforested areas play a key role in the protection of vulnerable sloping lands that are increasingly being cultivated (including land outside of cooperatives having more than a 15 degree slope). As gully erosion is visible on cultivated hill slopes, these measures cannot be emphasized enough, also considering the extent to which cultivation on sloping lands is taking place, i.e. about 1 million hectares or more on a national scale. While project achievements are significant for the individual cooperative farms – wood lots planted under the environment preservation component are now deemed sufficient for their annual fuelwood requirements – they are inevitably marginal when facing sloping land degradation at the national level. On the other hand, this impact domain was strongly driven by an attitude change on matters of environmental preservation, without which the achievements would not have been attained.
45. **Institutions and policies.** Some relaxation of the rigidly planned agricultural apparatus is now visible, which the project has not directly contributed to but has been able to take advantage of. However, the creation of a potato seed production system, which is complex by nature and built on a decentralized set-up, can be attributed mostly to the project. The cooperative farms can now apparently co-design and implement on-farm trials, which potentially culminate in official extension recommendations. The ongoing liming trials bear the hope that corresponding recommendations will be issued in a not so distant future. Under the project, the cooperative farms were able to determine and then implement the community facilities and services component, to realize the farm output processing component, and to administer the household and cooperative credit component efficiently in concert with the Central Bank. These are positive trends in an institutional environment that is otherwise very vertical and closed. They hint at an increased management capacity within the agricultural and microfinance sector.

¹⁷ Cooperative farm database provided by the PMU. Yield increases calculated as the increases between biannual 2002-2003 averages and 2006-2007 averages.

¹⁸ According to WFP, the persistent lack of animal protein and lipids for pregnant and lactating mothers leads to stunted growth in children.

¹⁹ Children are defined as stunted if they fall below the fifth percentile of the reference population in height for age. If substantially more than 5 per cent of an identified child population have height for age that is less than the fifth percentile on the reference curve, then the population is said to have a higher-than-expected prevalence of stunting, and inadequate nutrition at an early age is generally the first cause considered.

46. Overall the project's impact on rural poverty is satisfactory, with especially strong performance in building social capital, as well as promoting food security and incomes.

VI. Sustainability and innovations

47. **Sustainability.** Various factors enhance the sustainability of project activities. Important among these is that households, particularly women-headed, have been enabled to assume risk and responsibilities. This is the essence of social capital and empowerment, which stands a fair chance of being sustainable. The development of a livestock breeding and fattening system, with cooperative farms and households working in tandem, has generated assets, income, savings and food security. The widespread adoption of improved crop rotations is technically sound and 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 for unleashing additional human talent at various levels. In addition, the evaluation notes the likelihood of sustainability of the potato seed supply and continuity of the environmental preservation efforts, as both are carried by an official government policy.
48. On the other hand, the sustainability of some project achievements is a cause for concern. Dependency on imported machinery, spare parts, inputs and energy is pervasive for the agricultural sector as a whole, and the project brought only a temporary and marginal relief. Moreover, the visibly continuing process of cultivating sloped land originally under forest, outside the official array of cooperative farms, is an important environmental sustainability concern. Despite the achievements, the resource base of the cooperative farms and households remains fragile and prone to risks. Thus a consecutive series of bad harvests or a new adjustment of administered prices may compromise the respectable impacts achieved by the project. In conclusion, the prospects for the sustainability of benefits introduced under the project are moderately satisfactory.
49. **Innovation, replication and scaling up.** The project promoted the introduction of a few important technical innovations (crop rotations, a potato seed multiplication scheme) that appear to have been disseminated by CCFMCs to cooperative farms not covered by the project. Field trials to further improve agricultural practices, although not directly promoted by the project, are under way. A downside with regard to further scaling up of those innovations is that research and development findings are not yet in the public domain in the country. The credit component was also an important innovation, which promoted household-level animal breeding and fattening activities, taking advantage of individual zeal and initiative, complementing, rather than competing with, collective farming activities. Also, the efficient manner in which the credit component was handled (most transaction costs were outsourced to the cooperative farms) was well adapted to the cooperative system in the country and may be considered innovative. The successful credit component is, however, apparently not yet being replicated outside the project cooperative farms. Current government policy also restricts opportunities for cooperative farm households to develop individual economic activities, which constrains the further increase of benefits from household credit. All in all, given also that the replication and scaling up of successful innovations is uncertain, the project was moderately satisfactory in promoting innovations.

VII. Performance of partners

IFAD

50. The evaluation commends IFAD, as the only international financial institution in the Democratic People's Republic of Korea, for its support to the rural poor in this particularly challenging country context. IFAD succeeded in designing a project that was relevant to national and IFAD strategies at the time, and drew on lessons from

former and ongoing operations in the country. The internal review of the project formulation allowed for several improvements in project design. However, project design was affected by limited access to information in the country, an insufficient involvement of national stakeholders and the lack of efforts to firm up partnerships with other international development partners. As a result, the intervention strategy of the project's largest component (sustainable crop production systems) was inadequate, and project partnerships, including cofinancing arrangements, were not formally established at project start-up. Fortunately, considerable improvements in project strategy, in particular for the crop production component, were introduced at mid-term review.

51. After Executive Board approval of the project in December 2000, IFAD's level of attention to the project decreased. A key problem was the very difficult communication links between the PMU and IFAD. Given IFAD's earlier experience in the country, this problem could have been foreseen. After project design, five different country programme managers were responsible for the project. As loan administration and supervision was outsourced to UNOPS, few opportunities for collecting first-hand experiences arose. After project approval, IFAD staff reportedly visited Ryanggang Province only twice, at mid-term review and during the second-last supervision mission, which was conducted by IFAD itself, in July 2007. Only after that mission were there attempts to correct issues of communication and financial management by using the remaining project funds and assigning technical assistance to this effect. However, the evaluation found no evidence that communication equipment had been purchased with loan proceeds or was being used by the project, as recommended. Training in financial management was provided after project completion in July-August 2008.
52. Over the project's life, 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 the total project cost. A total of US\$2.0 million was reallocated to the credit component after the mid-term review to help limit the impact of the 2002 artificial inflation of prices. In addition, around US\$2.2 million was 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 these considerable resources will be used entirely in line with project objectives, a concern already raised by the 2007 supervision mission.
53. In conclusion, IFAD's performance overall in the project was found to be moderately unsatisfactory.

Government

54. Despite severe communication limitations,²⁰ the PMU succeeded in assuring input delivery to the 37 cooperative farms with full project support, and to guide the other government agencies to implement project activities in the various components not directly under PMU control. The PMU managed to secure stronger involvement of NAAS after the mid-term review, which probably saved the effectiveness of the project's first and largest component (sustainable crop production systems). However, the PMU was not strong or connected enough to prompt cofinanciers to take significant steps to implement what the loan agreement put forward in terms of cofinanciers' 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 essential financial information; (ii) serious irregularities in procurement procedures; and (iii) shortcomings in financial statements, both from the PMU and the Central Bank.

²⁰ The PMU has no proper e-mail account, no access to the Internet and no way to directly contact IFAD, UNOPS or other project partners by telephone.

55. The policy shift in 2002 allowed for more autonomy in production planning for the cooperative farms, which facilitated the implementation of the main component in particular. Strong policy support helped the project to achieve its reforestation targets under the environment preservation component with full commitment from the Ministry of Land and Environmental Protection and cooperative farms alike, without the large volumes of food for work originally to be provided by WFP. However, the devaluation of the KPW, coupled with the adjustment of prices in 2002, strongly reduced the real value of the credit revolving funds as discussed in paragraph 39. Also, insufficient efforts were made by the Ministry of Agriculture, the line ministry responsible for the project, to support the establishment of partnerships between the project and national and international institutions in the country. Throughout project life, information was managed in a very restricted manner, and UNOPS and IFAD missions were not readily granted access to the field. As mentioned in paragraph 23, limited freedom of movement and scarce access to background data for project design missions handicapped the project design process and thus affected project relevance.
56. On balance, the Government's performance was found to be moderately satisfactory.

UNOPS

57. The quality of supervision reports was acceptable overall, considering the difficulties met by supervision teams to access information and visit 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 allocated to proper discussion of findings and recommendations with project partners at the end of each supervision mission.
58. Supervision of fiduciary aspects of the project by UNOPS was insufficient. On a number of occasions, UNOPS could not prevent local purchases with hard currency and also approved purchases based on English-language translations of supplier documents without verification of original invoices. UNOPS allowed several expenditures in cases where contract splitting – to bypass UNOPS's prior review – was obvious. Globally, UNOPS's performance was moderately unsatisfactory.

VIII. Summary of ratings

59. The table below summarizes the evaluation ratings for the project.

Table 2
Performance of the Uplands Food Security Project

<i>Evaluation criteria</i>	<i>Ratings</i>
Project performance	
Relevance	4
Effectiveness	5
Efficiency	3
Overall project performance²¹	4
Rural poverty impact	
Household income and assets	5
Social capital and empowerment	6
Agricultural productivity and food security	5
Natural resources and the environment	4
Institutions and policies	4
Overall rural poverty impact	5
Overarching factors	
Sustainability	4
Innovation, replication and scaling up	4
Overall project assessment²²	4
Performance of partners	
IFAD	3
Government	4
UNOPS	3

IX. Conclusions and recommendations

A. Conclusions

60. The project was relevant in that it addressed significant rural poverty in relatively remote and resource-poor areas of the country. Its design drew on lessons from former IFAD operations in the country, especially with regard to the credit component. However, the clarity and technical soundness of proposed activities was partly compromised by substantial information gaps at design and a deficient involvement of local expertise. For instance, project design was unclear regarding the cropping systems to be promoted and did not address the pervasive soil acidity, which constrains crop response to fertilizer applications. Moreover, project design failed to formalize cofinancing and technical assistance agreements with key project partners and ignored the communication problems between the PMU and project partners, including IFAD. As a result, neither food-for-work from WFP nor technical assistance from FAO and UNDP was delivered as foreseen at appraisal.
61. The impacts achieved in the domains of household assets and income, social capital and empowerment, 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 on 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, and talent was unleashed to run small-scale livestock operations at the farmer’s own risk and responsibility. However, the expansion of benefits from household credit is constrained by the limits imposed on individual economic activity in the cooperative farms by current government policy. The impacts regarding natural resources and

²¹ The rating for overall project performance is, as per OE project evaluation methodology, calculated as the average of relevance, effectiveness and efficiency.

²² The overall project assessment rating is, as per OE methodology, given by the evaluation team taking into consideration its assessment of project relevance, effectiveness, efficiency, rural poverty impact, sustainability and innovation.

the environment were adequate in the immediate vicinity of the cooperative farms, but unavoidably limited when considering the degree of degradation of sloping land on a broader scale.

62. The project invested in areas with 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 cooperative farms and households working in tandem. Increased household incomes and assets are likely to protect households in cooperative farms from future shock and stress. However, the project did little to reduce cooperative farms' dependency on the imports and farm machinery it procured. Farm machinery is losing its usefulness as a result of difficult access to spare parts and lack of adequate machinery maintenance capacity. The overall resource base of cooperative farms is still fragile, and the challenge of producing enough food for the country's population remains substantial. The visibly ongoing process of encroaching sloping land continues to be a matter of serious environmental concern.

B. Recommendations

63. The project's interim evaluation endorses a second phase of the project provided that the evaluation's recommendations have been fully formalized in the forthcoming results-based COSOP and are taken into account in the second phase's design and implementation:
64. **Recommendation 1: Project design.** To ensure that future IFAD-funded interventions in the Democratic People's Republic of Korea respond to the needs of the rural poor and propose sound and sustainable technical and institutional solutions to rural development constraints, the design process in the future would require: (i) ample participation by the envisaged target population and their existing organizations; (ii) strong collaboration with national and international rural development partners; (iii) full access granted by the Government to relevant information required for sound project design; and (iv) mobilization by IFAD of 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 for the country.
65. **Recommendation 2: Partnerships.** These stand out as the key to development cooperation with the Democratic People's Republic of Korea and therefore: (i) 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 the country; (ii) the Government should actively encourage partnerships among national and international institutions and take up a coordinating role; (iii) the Government should also promote communication and information sharing between the PMU and project partners, all through the project cycle; and (iv) project partnerships, including cofinancing 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.
66. **Recommendation 3: Sustainability.** Environmental, technical and economical sustainability of rural development efforts and achievements should be given greater attention. In particular: (i) 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 cooperative farms; (ii) 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 (iii) innovative

technical options to increase and maintain soil fertility on cooperative farm lands, as less dependent as possible on imported inputs and machinery, should be further explored through field trials and, if found adequate, divulged to cooperative farms for generalization. This recommendation could be initiated with the support of an IFAD grant, complemented by technical assistance from national and international rural development partners.

67. **Recommendation 4: Household credit.** Considering its important impact on income, food security and the empowerment of rural households, the household credit scheme could be scaled up to all cooperative farms in the country, possibly with the support of a new IFAD intervention. However, it would be necessary that: (i) the reporting system of the Central Bank towards the PMU and project partners be improved, and the bookkeeping system at farm level be standardized; (ii) additional entrepreneurial freedom for potential borrowers be explored and agreed on; and (iii) the concomitant lending for small livestock to cooperative farms, either through work teams or sub-work teams, remain an option, which may have significant potential for synergy with household credit.

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