

# **Impact of IFAD supported agricultural projects on poverty and policy**

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## **1. Introduction**

This paper describes how IFAD support for agricultural extension in Bangladesh has assisted extension services to become more effective, pro-poor and pluralistic.

Since the start of its operations in Bangladesh in 1979, IFAD has been supporting the agricultural sector. Of a total of 21 projects implemented since then, all have been in the rural sector, and four have been primarily agricultural crop extension projects, while two each have supported field activities in fisheries and livestock. The first project that focused on agricultural extension services was the Marginal and Small Farm Systems Crop Intensification Project (MSFSCIP), which ran for eleven years from 1987 to 1997 in the northwestern district of Kurigram. This was followed by the Netrakona Integrated Agricultural Production and Water Management Project (NIAPWMP) which focused on this district north-east of Dhaka from 1994 to 2001. The Agricultural Intensification and Diversification Project (ADIP) covered four districts and has only recently been completed, running from December 1997 to December 2004. The final project in the series: the Smallholder Agricultural Intensification Project (SAIP), started in 2000 and is still ongoing. This paper discusses the three completed projects: MSFSCIP, NIAPWMP and ADIP; in terms of the evolution of the approach to agricultural extension, their impact on poverty, and the effect on wider policy for agricultural extension and design of other projects.

## **2. Marginal and Small Farm Systems Crop Intensification Project**

The objectives of MSFSCIP were: (i) to assist marginal and small farmers to increase cropping intensity, improve the productivity of the cropping system as a whole and optimise water utilisation through increased production of rabi crops; and (ii) increase productivity and labour absorption capacity of non-crop activities presently undertaken at the farm level and to create more employment opportunities through additional income generating activities. Features of MSFSCIP were:

- group based approach to extension services, with separate groups being formed for both male and female marginal (up to 1.5 acres) and small (1.5 to 2.5 acres) farmers.
- partnership with an NGO (RDRS) to form and support groups
- provision of credit to groups as well as extension support, with credit provided by four public sector banks
- improvement of rural markets
- PSU supported by GTZ
- physical development of DAE facilities

At the time of the start of the project, the national extension system was designed around the Training and Visit (T&V) approach. This relied on a large number of field based staff (Block Supervisors – BS), each of whom would pass a weekly extension message to about 80 to 120 contact farmers. In turn each of the contact farmers would pass on the message to 10 other

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households. The problem with the T&V system was that the contact farmers tended to be from the larger land holdings, and their contact with other farmers was inadequate. In addition the messages had a top-down approach, originating in at the district agricultural office, were often inappropriate to the needs of farmers.

A review of extension methods was carried out for IFAD by UNOPS in September 1992. This reviewed the project's experience with T&V, and recommended that:

- the extension system in the district change to working through groups rather than contact farmers, with “farmers’ clubs” being formed for farmers who were not in project groups;
- take full account of the role of women, including forming groups for women farmers;
- adopt a participatory approach with farmers as clients and contributing to innovation via “technology dialogue”;
- thana staff should carry out an annual PRA exercise with farmers to understand farmers’ needs and jointly work out a plan for the next year;
- adopt a bottom-up approach, with the thana being the main level at which plans are developed; and
- annual extension workplans should be developed at thana and district level.

The project faced a number of problems, including delays in implementation. The project did not really get underway until the GTZ TA team arrived in 1989, and further delays in agreeing a credit plan with the participating banks meant that lending did not fully start until January 1992. There were also problems in establishing a working partnership between the NGO and DAE. Initially the project adopted marginal farmer groups already formed by RDRS, while DAE formed small farmer groups (all male). Later, RDRS also supported small farmer groups, but it appears that these groups got more extension support from DAE than marginal farmers.

Despite these problems the project achieved its targets in terms of group formation (see Table 1). Most groups got access to credit, which was used for a range of crop, livestock and non-farm activities.

**Table 1: Project groups and lending as of February 1997.**

Group type		Total groups	Receive credit	Percent of groups
Marginal farmers	Male	940	824	88%
	Female	935	771	82%
	Total	1,875	1,595	85%
Small farmers	Male	803	517	64%
	Female	72	20	28%
	Total	875	537	61%
All	Male	1,743	1,341	77%
	Female	1,007	791	79%
	Total	2,750	2,132	78%

Impact evaluation surveys show the project had a positive impact on farm incomes and poverty. Table 2 shows how the areas of cultivated land and homestead garden increased. There was a particularly significant increase in land operated (which includes land rented-in) for marginal farmers – from 0.48 to 0.70 acres. There was a significant increase in livestock numbers (Table 3).

**Table 2: Increase in land and homestead gardens**

Type of farmer		Cultivated land (acres)		Homestead gardens (acres)	
		Own land	Operated	Vegetables	Orchard
Marginal	Before	0.37	0.48	0.037	0.029
	After	0.43	0.70	0.058	0.035
Small	Before	1.70	1.86	0.093	0.092
	After	1.78	2.05	0.108	0.095

Source: Impact of MSFSCIP, Nizam U Ahmed, 1995

**Table 3: Increase in livestock numbers**

Type of farmer		Cattle	Sheep, goat	Poultry
Marginal	Before	1.00	1.00	6.97
	After	1.89	1.79	10.55
Small	Before	2.57	1.43	12.68
	After	3.32	2.28	15.01

Source: Impact of MSFSCIP, Nizam U Ahmed, 1995

Food security also improved, with the proportion of marginal farmer households reporting that they had sufficient rice or flour for all members of the household increasing from 15% to 60% (Table 4). Small farmers, having a better supply of food in the pre-project situation, spent much of their increased income on housing, with expenditure more than doubling (Table 5).

**Table 4: Food security**

Type of farmer		No. of times per day eat rice or roti		Percent of hh with sufficient for all
		Adult	Child	
Marginal	Before	2.36	2.84	15
	After	2.81	3.23	60
Small	Before	2.86	3.28	57
	After	2.93	3.51	83

Source: Impact of MSFSCIP, Nizam U Ahmed, 1995

**Table 5: Expenditure on housing**

Type of farmer		Taka per year
Marginal	before	1,482
	after	1,998
Small	before	2,132
	after	4,356

Source: Impact of MSFSCIP, Nizam U Ahmed, 1997

The project made some significant innovations for the extension approach: the group based extension approach, targeting of marginal and small farmers for poverty alleviation, and bottom-up planning. It also demonstrated the benefits of combining credit and technical support and the involvement of NGOs in group formation and support.

### **3. Netrakona Integrated Agricultural Production and Water Management Project**

The aim of the project was “to increase on a sustainable basis the incomes and food security of marginal and small farmer households in order to arrest the process of marginalisation and landlessness”. This was to be met by: “increase unit-area crop production and returns at farm level through support to targeted extension and research, expansion in the use of irrigation equipment by poorer farmers, and reduction of the risk associated with flooding in certain areas”. The target group was about 250,000 of the 340,000 rural households in the district, comprising of small and marginal farmers and landless people.

The project was implemented between January 1994 and December 2001. Features of the project were:

- (a) Group formation: with NGOs contracted to form separate groups for: (i) landless and (ii) marginal and small farmer households.
- (b) Agricultural extension services: with over 11,000 crop demonstrations and 80,000 training places provided to farmers.
- (c) Credit: a revolving loan fund (RLF) was administered by six (later nine) NGOs to provide credit for landless households, and a loan guarantee fund was established to enable the Agrani Bank (AB) to lend to farmers without the need for security.
- (d) Polder rehabilitation: for BWDB to rehabilitate 30,000 ha of flood control polders.
- (e) Rural infrastructure: for LGED to improve rural roads, markets and other infrastructure
- (f) Technical Assistance funded by the IFAD loan with an Extension Management Specialist provided via Dutch support.

At the start of the project, the New Agricultural Extension Policy was being introduced nationally by DAE (see Section 5 below). The Extension Management Specialist and other members of the TA team supported the formation of Upazila Agricultural Extension Committees.

Although the project was generally successful, some aspects did not work as well as had been anticipated:

- (a) The groups formed by NGOs did not fully link into the extension services provided by DAE – which tended to go to existing DAE groups.
- (b) Although the credit to landless group members from NGOs worked, well, agricultural credit was beset by difficulties, and only reached a small fraction of the original target in the PP of 80,000 farmers.
- (c) The adaptive research component was contracted to a firm of consultants. Although numerous field trials were carried out, it did not generate much information of use to DAE.
- (d) While implementation of the polder and rural infrastructure components was, on the whole, satisfactory, the participation of beneficiaries has not been as great as envisaged at appraisal. Although given the nature of the works (largely rehabilitation of existing infrastructure), this was probably unrealistic.

Extension services supported a significant increase in rice production (new varieties of rice were demonstrated), and rice prices fell to the benefit of the poor. Emphasis was placed on vegetable production, and the area under vegetables increased by more than three times and new types of vegetables were introduced. The project had a significant impact on its goal of reducing poverty and increasing food security. Participatory impact evaluation has found a significant improvement in food security (Table 6).

Impact evaluation surveys suggest that impact was greater for the landless IGA credit groups – where credit services had been delivered more smoothly than for the agricultural credit groups.

Impact evaluation found that around 80% of these IGA credit households had acquired assets such as livestock, land and houses, and there have been a significant improvement in a number of livelihood indicators (e.g. water supply, sanitation and medical care).

**Table 6: Food Security situation in four villages** (figures in percentages)

Village / activity	Up to 3 months			4-6 months			7-9 months			10-12 months		
	Before	After	Change	Before	After	Change	Before	After	Change	Before	After	Change
Panchananpur IGA/ag.credit	47.1	9.6	-37.5	27.4	41.1	+13.7	19.2	32.8	+13.8	5.5	16.4	+10.9
Balai Nagna DAE support	74.0	61.0	-13.0	7.0	15.0	+8.0	15.0	20.0	+5.0	4.0	4.0	0.0
Dorgapara IGA credit	44.9	27.5	-17.4	38.6	33.0	-5.6	9.4	32.3	+22.9	2.5	2.5	0.0
Boro Elashpur DAE support	32.4	10.3	-22.1	29.4	14.7	-14.7	20.6	30.8	+10.2	17.6	17.6	0.0

source: PCR mission PIE

However, where farmers did get loans, there were significant benefits, with reduced recourse to moneylenders for consumption purposes or for crop inputs. Farmers expanded the area cultivated by increasing cropping intensity or by renting in land. Some farmers also used loans to buy assets such as irrigation pumps and cattle, and to invest in non-agricultural enterprises.

The project resulted in significant benefits for women who were 97% of borrowers for IGA credit, and over 50% of agricultural credit groups. Although most DAE extension activities (such as training) involved male farmers, DAE did pay more attention than previously to women, and formed female extension groups. Approximately 20% of the labour-intensive earthwork was carried out by women, who would be from particularly poor households.

**Table 7: Impact of credit programmes on women**

	IGA Credit		Agril. Credit (Direct)		Agril. Credit (Indirect)	
	before	After	before	after	Before	After
Can move freely within the village	38	123	21	43	33	48
Can contribute to family income	30	128	8	44	17	54
Can save money	42	131	13	45	19	51
Participate in family decision making	58	132	1	15	0	13
Participate in village decision making	11	64	3	44	1	54
Participate in group discussion	4	129	0	14	0	6
Family planning	54	114	0	0	0	0
Other	1	12	0	0	0	0
Total		132		46		54

Source: PCR

Lessons learned from the implementation of NIAP included:

- Focus on poor:** The project showed that agricultural technology and information can have an important impact on the livelihoods of the poor – marginal and landless farmers.
- Working with women:** the project has shown DAE the important role of women, not just in micro-credit but also as agricultural producers. This resulted in practical and strategic benefits to women.

- (c) Partnerships: DAE has shown that it can work effectively in partnership with NGOs, but better coordination could have resulted in DAE services being more effectively targeted at NGO groups. The partnership between NGOs and AB did not work, and it is apparent that the modalities of bank lending used in this project were not an effective way of funding micro-finance organisations.
- (d) Horticulture: Fruit and vegetables have particular potential both in terms of improving the diet of farm households and in generating the maximum cash from sales using only a small amount of land. They are therefore of particular benefit to those with the least amount of land.
- (e) Integrated extension services: credit was provided for investment in livestock, poultry and fisheries. Unlike crops, DAE does not have technical expertise in this area, but it was shown that there is great demand from farmers for such information and support – especially when they are investing loans in these activities.
- (f) New Agricultural Extension Policy: the project made a considerable effort to implement NAEP. Certain aspects of NAEP could usefully be re-thought, taking account of the fact that DAE's activities revolve around the implementation of a large number of projects with different approaches and objectives. Bottom-up planning has been difficult to implement as extension resources are allocated on a top-down basis by the many projects implemented by DAE. The monitoring activities of NEAP, such as SEMs, were not effective, and have not provided data for project level monitoring or planning.
- (g) On-farm research: the research component might have worked better if it had been carried out on a larger scale, with more inputs from highly qualified and experienced researchers. Future projects could include specific provisions to strengthen linkages with existing research organisations.
- (h) Targeting of extension messages: Although different groups of farmers do have differing needs for technical information, many technologies, such as irrigation and rice production, are relevant to a wide cross section of farmers.

#### **4. Agricultural Diversification and Intensification Project**

The goal of ADIP was to improve the livelihood of 122 000 landless, marginal and small farmers. The objectives were: (i) to enable landless and marginal families to increase their incomes and improve their nutrition through poultry and fish enterprises, agro-processing and other income-generating activities and homestead gardening; and (ii) to enable small farmers to intensify and diversify crop production as well as pursue other rural enterprises. The project area was four districts adjacent to Dhaka - Narshingdi, Gazipur, Kishoreganj and Tangail, and the project was implemented from 1998 to 2004.

Features of the project were:

- (a) Formation of groups of landless, marginal and small farmers by NGOs
- (b) Provision of agricultural extension services by DAE for these groups. This included additional training for one member of each group nominated as a "*krishi sampodok*" (agricultural secretary). Over 22,000 crop demonstration and 70,000 training places were provided to farmers.

- (c) A revolving loan fund (RLF) was administered by 22 NGOs to provide credit for landless and marginal farmer households, with funds for lending to small farmers channelled to NGOs via Agrani Bank.
- (d) Rural infrastructure: for LGED to improve rural roads, markets and other infrastructure
- (e) Technical Assistance funded by the IFAD loan

The project design learnt significant lessons from the two earlier projects. In particular, the linking of agricultural extension and credit was much more successful, with extension services only being provided to project groups that had been formed by NGOs. All of these groups received credit. Although, as in Netrakona, there were problems in channelling funds to NGOs via Agrani Bank, more emphasis was placed on the RLF administered by the DAE PMU, with these funds used for lending to marginal farmers as well as the landless.

An innovation of the project was the establishment of Market Operating Groups. These were five person groups, with each member being drawn from an existing project group. MOG members received larger (microenterprise) loans from NGOs and training in marketing. Most of them established marketing enterprises, often buying products such as vegetables from ADIP farmer group members and selling them to wholesale buyers in Dhaka.

The project achieved its logframe goal of improving the livelihood of 120,000 families – with good evidence from the impact study of improved livelihoods in terms of increased ownership of assets such as livestock, improved food security, and better housing and sanitation. Access to land also improved, with a large increase in land being leased in.

At the purpose level, the project seems to have only been partly successful in its objective of intensifying and diversifying crop production, although there have been some increases in cropping intensity, and the area, yield and sales of vegetables. The project was much more successful in its other two purpose level objectives. There have been substantial increases in self-employment and in livestock and other non-crop income generating activities. The position of women has been greatly improved. Over 90% of group members are women, and access to credit and technical support has generated new livelihood options for women, increased social status and self-confidence. Women have acquired land, livestock and other assets.

Lessons learned from the implementation of ADIP include:

- (a) The overall approach (working with groups, poverty targeting, focusing on women, combining credit and extension services) works well, but the scope for agricultural development is limited for the functionally landless.
- (b) Demonstrations were not as effective as training and village level training was more cost-effective than upazila training.
- (c) Livestock training seems to have had a good impact and, given the importance of livestock and non-farm income generating activities for those with little land, more emphasis should be given to these sectors in future projects involving the functionally landless and marginal farmers.
- (d) Adaptive research did not generate useful results - on-farm trials did not generate enough data to explain variations in yields between locations, so it was difficult to draw strong conclusions. There is clearly a need for stronger links and a more active partnership with research organisations.

- (e) It remains difficult to get banks to lend wholesale funds to NGOs for on-lending to group members. Interest rates, loan terms and collateral are barriers that it has not been possible to overcome.
- (f) Access to micro-credit is highly appreciated by small and marginal farmers. These have not been the target group for most micro-credit programmes – which only aim to serve the functionally landless. These farmers are able to make good use of loans given on standard micro-credit terms to intensify agricultural production and diversify their sources of income.

**Table 8: Impact of ADIP**

		Before	After	Change
Goal – improved livelihoods				
Access to land	Average area operated (decimals)	69.8	79.0	+13%
	Percent of households leasing in land*	4.2%	22.1%	+428%
Food security	% of households having three meals a day	55.5%	97.3%	+75%
	Number of times consume meat per month	1.99	3.37	+69%
Drinking water	Households owning well	57.8%	80.3%	+39%
Sanitation	Households using slab latrine	38.0%	71.4%	+88%
Purpose 1: small and marginal farmers intensify & diversify crop production				
	Overall cropping intensity	192.5%	205.3%	+6%
	Average area of field vegetables (decimal)	5.5	9.0	+63%
	% of area vegetables in Rabi season	15.5%	35.8%	+131%
	Avg. annual sales of veg per household.	Tk3,799	Tk6,341	+67%
Purpose 2: Marginal/landless families increase livestock, IGAs & homestead gardening.				
Cattle	Households owning milking cows	28.7%	50.1%	+75%
	Average number of cattle per hh	0.58	1.14	+96%
Sheep and goats	Households owning goats	19.7%	36.5%	+85%
	Average number of goats per hh	0.49	1.15	+135%
Poultry	Average number of chickens per hh	6.1	34.0	+461%
Vegetables	Households growing vegetables	70.1%	81.2%	+16%
	Average area of homestead gardens (decimal)	2.5	3.2	+29%
Income sources	Number of earning members per hh	1.46	1.95	+34%
	% of households with four or more income sources	5.1%	13.9%	+173%
Purpose 3: Women improve their position through access to resources, skill development and an increased role in household management.				
Access to land	Average area of land operated by women (dec)	2.50	5.54	+122%
Assets owned	Average number of cattle owned by women	0.18	0.65	+255%
	Average number of goats owned by women	0.18	0.61	+235%
	Average number of poultry owned by women	2.57	26.46	+931%
Household participation	Women participate in hh decision making	35.2%	88.3%	+151%
	Women participate in financial management	29.6%	88.8%	+200%

\* excludes sharecropping. Source: impact survey of 690 households

- (g) The project included a specific gender programme, with training and workshops. There is ample evidence that the combination of credit and training had a very positive impact on the position of women and gender relations at the household level.
- (h) The project placed more emphasis than earlier IFAD projects on impact evaluation. Useful lessons have been learned regarding M&E methods. It has been shown that it is difficult for PMUs to develop effective M&E systems without significant external support.
- (i) Group members need to continue to get loans and NGO support after the end of the project, and information and advice from DAE. Projects are not a “one shot” solution but should aim to establish long term linkages.

## 5. Evolution of extension services and policy

The Training and Visit System (T&V) for agricultural extension was introduced to Bangladesh through the support of the World Bank Extension and Research Projects I and II (ERP), from 1977 to 1991. Prior to this, there was one Union Agricultural Assistant providing a service to 2-3,000 farm families (1:2,500).

The key features of T&V as applied in Bangladesh were:

- (a) Contact Farmers: Block Supervisors (field extension agents) would work with 80 Contact Farmers directly in a block, who would extend messages to 10 other farmers each - giving a BS:Farmer ratio of 1:800. ERPII supported the recruitment of 2,270 extension agents to reach this ratio. Thus, at the end of 1991, there were 12,640 BS in Bangladesh. There was a focus on individual direct contact, and few other extension methods were used.
- (b) Impact Points: T&V comprised a doctrine of continuous training and regular field visits. Each fortnight, BSs would be taught 2-3 recommendations (impact points) to teach their Contact Farmers. A regular fortnightly schedule was to be maintained.
- (c) Single Line of Command: ERP supported the merging of six mono-crop extension agencies into one - DAE, and established a unified line of command.

The final evaluation of ERP concluded that T&V had produced results, but there were weaknesses:

- (a) Farmers found only 30% of impact points useful - most were traditional recommendations that did little to meet farmer needs.
- (b) Diffusion was limited as 45-55% of Contact Farmers failed to pass messages to other farmers, though again, conversely, the same proportion of Contact Farmers did extend messages - a relatively good performance.
- (c) BSs could not maintain the fixed visit schedule and generally met 20-25 farmers each fortnight, rather than the targeted 80.
- (d) Contact Farmers were, by vast majority, male and resource-rich (having more land than other farmers).
- (e) Research-extension linkages were extremely weak, with DTCs and the NATCC largely non-functional.

In 1993-1995 the government, with donor assistance, drew up its New Agricultural Extension Policy (NEAP). This aims to address some of the shortcomings of the T&V system, and place a much greater emphasis on poverty reduction and participation.

Features of NAEP are:

- (a) Partnership with other agencies – including NGOs and the private sector.
- (b) Responsiveness to farmers needs with comprehensive Farmers Information Needs Assessments (FINA). The assessment records would be used to develop extension plans in Upazilla and Districts.
- (c) Working with Groups: this would increase contacts with greater number of farmers (than was the case with individual contact farmers).
- (d) Decentralized extension planning: Upazilla and District Offices develop their own extension plans while the DAE headquarters would concentrate on monitoring and supervision functions.
- (e) Targeting all categories of farmers: extension plans are carefully targeted to all categories of farmers (big, small, marginal, landless, and also young and female farmers).
- (f) Using a range of extension methods: methods include not only training, visits and demonstrations but also group meetings, motivational tours to research institutes and other localities, printed material, folk media like songs and drama, etc.<sup>2</sup>

Many of these features had been tested by MSFSCIP. In particular MSFSCIP pioneered working with groups, targeting specific groups of farmers, and working in partnerships with NGOs. It also endeavoured to introduce the idea of bottom up planning.

Although the World Bank/DFID funded ASSP and ASIRP projects attempted to introduce NAEP as a programme covering all extension activities, DAE is primarily a project implementation agency. Virtually all its funds for field activities come from projects, each of which has its own objectives and approach. Nevertheless many principals of NAEP are incorporated into projects – in particular working with groups and targeting poorer farmers.

DAE projects also replicated other aspects of IFAD funded projects. A series of four IDB funded projects (two on-going, two at preparation stage) have been planned by DAE on the exact pattern of ADIP. Each project covers a number of districts, and involves contracting NGOs to form groups and provide credit, extension services from DAE and rural infrastructure from LGED. DAE's largest on-going project is the ADB funded Northwest Crop Diversification Project (NCDP) which is also largely based on the same model. However this project and the IDB projects have suffered from the same problems as NIAPWMP and ADIP in channelling funds for credit to NGOs via banks.

The strategy for agriculture set out in the government's recent draft Poverty Alleviation Strategy Paper (PRSP) also takes up some themes from IFAD projects. This includes recognising the benefit of the linkage between micro-credit and other inputs, including training and skill development, transport facilities and marketing facilities. The PRSP also proposes to develop demand-led extension services: for DAE via the NAEP with a pro-poor focus and stress on participatory extension services including support for women farmers. Emphasis will be given to facilitate partnership of public sector agencies (DAE, DLS, DoF and BRDB) with the private sector and NGOs, - especially for agencies such as DLS and DoF which lack the village level field staff of DAE. Such partnerships with NGOs have proven successful in IFAD fishery and livestock projects.

The MoA, in partnership with FAO, has recently been carrying out an Agricultural Sector Review, the first stage of which was preparation of a series of Actionable Policy Briefs. The brief on extension recommends adopting a group based extension and training system (something first

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<sup>2</sup> Government of Bangladesh, Ministry of Agriculture. 1995. Agricultural Extension Manual.

adopted in MSFSCIP). It also suggests that upazila extension centres should be established providing an integrated service covering livestock and fisheries as well as crops. ADIP has shown that livestock support is a high priority for marginal and small farmers, and that such support can be provided alongside crop-based extension services. The brief on marketing and agribusiness recommends that access to credit be improved – and that this could involve an expanded role for PKSF in channelling funds to NGOs for on-lending to farmers. NIAPWMP and ADIP demonstrated that micro-credit from NGOs is an appropriate and viable way of providing credit to marginal and small farmers. Demand and feasibility of NGO micro-credit for farmers