An alternative approach to direct incentives in participatory rural development:  
a case study of a small-scale irrigation project in Malawi  
参加型農村開発における無償供与に対する代替的アプローチ 
－マラウイ国小規模灌漑事業を事例に－

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I Introduction

Participation is widely accepted as an essential element of rural development in developing countries. Oakley (1993)\(^3\) explores concepts and practices of participatory development and concludes that most rural development project documents consider participation as an important element. However, he also argues that many are simply a cover-up of conventional top-down approaches with little participation in practice. In conventional rural development, direct material incentives such as cash payments, food-for-work and agricultural inputs have been employed to attract local people. However, these direct incentives actually distort local farmer’s adoption of transferred technologies and create dependencies.

The objectives of this paper are to explore current critiques of direct incentives and to show an alternative approach adopted by a small-scale irrigation project in Malawi. Irrigated agriculture is being promoted in Malawi since the late 1960s in order to foster rural development, to reduce rural poverty, malnutrition, disease and to stem the growing socio-economic inequalities. However, state run schemes have experienced numerous problems and the irrigated area has not been expanded as planned. In addition, the government has faced serious financial constraints. Consequently, there has been a move towards promoting stakeholder participation in irrigation schemes. The study case employed a non-direct incentive participatory approach with minimum external inputs and little external financial support. The experiences and lessons from this project can, therefore, have significant impacts on future irrigation schemes in Malawi.

II Methodology

This paper derives information from the then on-going project of a smallholder irrigation project financed by Japan International Corporation Agency (JICA) and the project staff. Data was also collected through field observations, attendance of meetings and interviews with participating farmers, extension workers of several extension offices, irrigation engineers at Rural Development Projects\(^5\) and government officials. This paper also benefited from an extensive review of literature on the use of direct incentives and the past agricultural and irrigation policies in Malawi in order to illustrate current arguments about direct incentives and to understand the general framework in which the case project took place.

III Critiques of Direct Incentives

3.1 Definitions

Various writers have defined incentives in a number of ways. Some argue that incentives and subsidies should be distinguished. They argue incentives are something which motivates a person to act whereas subsidies are a payment to reduce the cost of an activity. Sanders et al (1999)\(^3\) point out that they are often difficult to distinguish in practice. For the purpose of this paper, incentives are defined as any inducement offered by an external agency (government, NGO or other) in order to motivate the local population collectively or individually to adopt new techniques and methods aiming at better rural livelihoods. Incentives can further be divided into two broad categories: direct and indirect. Direct incentives include cash in the form of wages, grants, subsidies and loans. They can also be the provision of food, agricultural implements, livestock, trees, seeds or a combination of these. Indirect incentives can be tax incentives, price controls, land tenure arrangements and other fiscal and legislative measures. They can also include extension services, technical assistance, the use of equipment, social
services and the decentralisation of decision-making.

Our objective is not to criticize direct incentives in all settings. In fact, we believe it to be a useful tool for infrastructure building (roads, bridges, mid-scale dams, etc) and aid for extreme conditions (food relief for drought, for instance). Instead, our focus is on agricultural extension projects with relatively small infrastructure building mainly aiming at the improvement of productivity. Examples of these projects are soil and water conservation, integrated pest management (IPM), introduction of new crops, manure and other agricultural inputs and small-scale irrigation projects. These projects involve new techniques or modification of agricultural practice and aim at higher productivity within current or slightly improved conditions.

3.2 Issues of direct incentives

What is the problem of direct incentives? This is a central question for this paper. A project may justify the use of direct incentives by saying that they are faster, they can attract more people, they help trigger the process of farmers’ adoption or that people are so poor that they cannot afford the change in their agricultural practice. However, as Hellin et al. (2003) point out direct incentives are used simply because it is much easier to implement than indirect incentives which are often dependent on policy decisions at the government level. Evidence shows that, when direct incentives were employed, farmers rarely continued to adopt the techniques once the project ended. Pretty (1995) argues that ‘these direct incentives distort perceptions, create dependencies and give the misleading impression that local people are supportive of externally driven initiatives.’

These criticisms of direct incentives are in fact deeply related to participatory development approach itself. The importance of participation is generally argued by two schools of thoughts (Pretty, 1995). The first of these schools argues that participation provides better knowledge about the project area so that enhances the project efficiency. It is also argued that through participation a project can be transformed into a more locally suitable way so that the sustainability of the project is also enhanced. This school emphasises practical benefits of participation. The other school focuses on the ethical aspects of community participation. The central notion of this is that the main aim of rural development is to initiate mobilization for collective action, empowerment and institution building.

There have been many analyses arguing that participation is one of the essential components of success in rural development and the term ‘people’s participation’ or ‘local participation’ has become a norm in most, if not all, development agencies, including development banks, non-government and government organisations (Oakley, 1995). Chambers (1988) argues the importance of people-centred development as a practical strategy. He proposes a shift from conventional ‘transfer of technology’ approach to ‘farmer first’ approach in rural development in the Third World. According to Chambers, this strategy is a realistic solution since agriculture in the Third World is diverse, complex and fragile so simple technology transfer cannot be a solution for all. Table 1 below is a comparison between the conventional approach and the ‘farmer first’ approaches. Contrast to the conventional approach, the new approaches and methods are not a single form or static. The diversity itself is a sign of strength. These approaches imply shifts of initiatives, responsibility and action downwards in hierarchies, especially towards the rural poor farmers themselves. In these approaches, the new roles for outsiders, which Chambers calls ‘new professionalism’, are to create such settings where those shifts can occur.

Direct incentives, however, fix the conventional structure, disturbing the flow of information and encourage dependency. Farmers may see the transferred technology not suitable to their local settings but employ it as long as the project goes merely to gain cash, food, agricultural inputs or other forms of subsidies. Local information derived from participating farmers can always be misleading but with the use of direct incentives, local farmers may provide such information so as to gain the direct incentives. Related to this point, direct incentives also create dependency in local communities. Participation is often promoted in the name of local empowerment but with the use of direct incentives, the relationship between project staff and farmers is fixed as that of employers-employees. Arguably, it is precisely the structure which Chambers criticizes; outsiders as teachers and rural farmers as students. A development project can be differentiated according to who has opportunity in theory to bargain in the making and implementing the project designs. In most development projects, it was always outsider specialists who had the power. Participatory approaches are meant to change this structure. In the following chapters, we look into a small-scale irrigation project in which no direct incentives are used. We argue why the transfer of the technology is successfully carried out in the project.

IV Case Study: a Small-Scale Irrigation Project in Malawi

4.1 Historical background of irrigation in Malawi

Malawi is a long and narrow landlocked country in Africa, surrounded by Tanzania, Zambia and Mozambique. The total population was 11.9 million in 2002 and was growing by 3% per annum over 1975 to
In the most part of the country has two seasons, rainy (December to March) and dry (April to November). Agriculture is the predominant economic activity especially in rural areas. Up to the late 1960s, agriculture was mainly rain-fed farming by smallholder farmers and some limited irrigation farming at settler estates and seasonal flood plains (dimba). Agricultural production accounts for nearly 90% of Malawi's foreign exchange. Tobacco, tea, coffee, cotton and sugar are cultivated for foreign exchange earnings. Maize remains the most dominant crop by smallholder farmers.

According to the World Bank (2002), 65.3% of the population or 6.3 million people are poor and 28.2% of the population are in extreme poverty.

From the late 1960s, there was growth of interest in irrigated farming as a means to solve problems of rapid population growth and land scarcity facing the country at the time. The government implemented various irrigation schemes throughout the country. By the early 1980s, nearly sixteen irrigation schemes had been implemented. The main objective of these projects was to utilize undeveloped wetlands and to demonstrate to local communities, the methods and benefits of irrigated cash farming. The government wanted to increase the volume of tobacco and other agricultural products exports and, in turn, to reduce rural poverty, malnutrition, diseases and other socio-economic problems of rural communities. The government took a top-down approach in the management of irrigation schemes and farmers were merely expected to cultivate in the plots provided by the government. Consequently, local farmers had no sense of ownership of the irrigation schemes.

From the late 1970s onwards, Malawi has faced a serious economic crisis. The government could no longer afford its development projects, including irrigation projects. The World Bank and the International Monetary Fund and other donors, asked financial support by the government, demanded the adoption of structural adjustment programmes as a precondition. The areas of the programmes included the liberalisation of the agricultural sector and parastatal sector reform.

The high potential of irrigated cultivation in the dry season was not neglected during the structural adjustment periods. In fact, the World Bank and other donor agencies also noticed its high potential to reduce rural poverty. Various irrigation schemes and rehabilitation projects were conducted during the period. However, as Nkhoma et al. (2004) pointed out, these schemes were mostly unsuccessful due to the lack of, or delays in adequate financial funds through complicated funding mechanisms, lack of local participation programmes and shortage of human resources. The World Bank estimates that within the total of 200,000 ha of irrigable land, 57,000 ha is currently under irrigation, of which only 8,000 ha is by smallholder farmers.

### Table 1 Rural Development Approaches

<table>
<thead>
<tr>
<th>Main Purpose</th>
<th>Conventional*</th>
<th>Approach of the case**</th>
<th>Farmer first*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transfer of technology</td>
<td>Farmer's empowerment by irrigation</td>
<td>Farmer's empowerment</td>
<td></td>
</tr>
<tr>
<td>Who analyzes needs and priorities</td>
<td>Outsiders / specialists</td>
<td>Outsiders and Farmers</td>
<td>Farmers empowered by outsiders</td>
</tr>
<tr>
<td>What is transferred from outsiders to farmers</td>
<td>Package of rules, messages and practice</td>
<td>Methods and choices</td>
<td>Basket of principles, methods and choices</td>
</tr>
<tr>
<td>Menu</td>
<td>Fixed</td>
<td>Fixed</td>
<td>A la carte</td>
</tr>
<tr>
<td>Expected attitude of farmers</td>
<td>Listening to the messages, action following the rules, and employment adjustment or refusal of the package</td>
<td>Use of the methods, applying the principles and experiment of the choices</td>
<td>Use of the methods, applying the principles, and experiment of the choices</td>
</tr>
<tr>
<td>Outsiders expecting results</td>
<td>Extensive employment of the technology</td>
<td>Extensive employment of irrigation methods adapted to the localities</td>
<td>Broadness of choices and enhancement of farmers adoption ability</td>
</tr>
<tr>
<td>Extension approach</td>
<td>From extension workers to farmers</td>
<td>From a village to another</td>
<td>From farmers to farmers</td>
</tr>
<tr>
<td>Role of extension worker</td>
<td>Teacher, trainer</td>
<td>Promoter of the technology</td>
<td>Promoter, provider seeking choices</td>
</tr>
</tbody>
</table>

*From Chambers (1988) edited by authors

**Our view point

4.2 Project summary: JICA small-scale irrigation project

Facing these failures and challenges, the government of Malawi felt a pressing need to establish a measure realizing capacity building and development for smallholder irrigation schemes. Based on agreements between the governments of Malawi and Japan, it was decided that the Study on the Capacity Building and Development for Smallholder Irrigation Schemes in the Republic of Malawi (the Study) was to be carried out by JICA. The Study aims to build institutional capacity such as facilitation technical knowledge relative to smallholder irrigation development among government officers. Although the main component of this project is largely 'a study' and the training of extension workers, JICA has conducted pilot projects to alter the draft
irrigation package suitable to the local settings. The pilot projects were carried out under the jurisdiction of 4 Rural Development Project districts within 30 districts nationwide. This paper specifically focuses on these pilot projects. The term ‘project’ in this paper indicates these pilot projects unless mentioned otherwise.

The overall objective of the Study is to reduce rural poverty of smallholder farmers through irrigation development. In many, if not all, villages, people who are better-off are those who have land in *dimbas* and are mostly village heads’ relatives. This means that many villagers have no chance of dry season cultivation as they only have land in upland areas. This, in turn, implies that if the rain is erratic in a given year, hunger will be inevitable as they have no way of mitigating this scenario with *dimba* cultivation. Thus, directing water into upland farms greatly improve poor farmers’ livelihoods. Malawi has relatively rich water resources among African countries. However, poor farmers have been heavily affected by increasing natural vagaries such as heavy rainfall and drought, which arguably the results of the excessive deforestation to fetch firewood and expand the farmland areas associated with rapid population growth. Thus, the small-scale irrigation project can bring a significant improvement in food security and reduction of poverty in the rural areas.

The interesting feature of this project is that the project team, in principle, provides only technical assistance to extension workers and beneficial farmers. No subsidies are used and labour force by beneficial farmers is not counted as ‘work’ under the projects so that no cash payments or any subsidies are provided to the farmers. The project team provides, apart from technical assistance, the loan of necessarily tools such as hammers and shovels and several bicycles to the extension offices. The ideology behind the above principle is that “irrigation that has once become a culture never ends up in just one generation but is transmitted from generation to generation, ensuring sustainability yet beyond generation” [11]. Thus, the team set the main aim as to establish an irrigation methodology which can be transferred from a generation to another. For this purpose, even the costs of irrigation construction (e.g. construction materials such as cement, pipes, sandbags etc.) are shared by participating farmers.

Consequently, it is not feasible for mostly subsistent farmers to use these external materials to construct an irrigation weir, canal and plots. To minimise the external inputs, construction methods are specifically designed in simple ways and to use local materials such as wood, grasses, rocks, clay and so (see, Figure 1). Therefore, not only the management and maintenance of the irrigation but also the construction is carried out by participating farmers. Since these irrigation facilities (weir, canal, water bridges, etc) are mostly built with local materials, they have to be re-built every year. However, this re-building process at the beginning of the dry season also triggers discussion on the improvement, expansion, cost sharing and other matters related to irrigation. Arguably, the process itself makes irrigation sustainable and a culture of its own.

4.3 Adoption of technology by the farmers

The proposed design actually significantly contributes to the broad adoption of irrigation by farmers. In the 2003 dry season, the first year of the pilot projects, there were 23 irrigation sites in total of which 8 sites were constructed under the direct technical assistance of JICA, 5 sites were under the irrigation officers and extension workers, and 10 sites were initiated by extension workers and farmers themselves (see, Table 2). 4 irrigation sites were, in fact, launched by the initiative of those farmers who saw irrigation sites around their villages and asked extension offices for technical assistance.

<table>
<thead>
<tr>
<th>Table 2 Project Summary (2003)</th>
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<tbody>
<tr>
<td>Total</td>
</tr>
<tr>
<td>Site</td>
</tr>
<tr>
<td>23</td>
</tr>
<tr>
<td>Member</td>
</tr>
<tr>
<td>Land owner</td>
</tr>
<tr>
<td>Developed area, ha</td>
</tr>
</tbody>
</table>

*Source: JICA (2005).*

Figure 1 a Weir built by farmers

Table 2 shows the summary of these 23 irrigation sites in 2003. The total number of beneficiary farmers was 642, within which 170 were landowners. Non-landowner farmers participated this irrigation project through the organised irrigation club and rent arrangements, details of which were decided by each irrigation club. The
total area developed was 63.3 ha. These numbers are far smaller than those of past irrigation projects elsewhere but the impacts on their livelihoods were considerable. Field observation and interviews conducted in June-July 2004 confirm that these participating farmers enjoy greatly improved food security and cash income from the yield of the dry season. An increase in yield in rain-fed farming has also been reported by those farmers who bought fertilizer by the income of the dry season cultivation\(^{(1)}\).

From the field observation, it also becomes clear that there are a number of irrigation sites (264 sites) initiated by those farmers who observed the success of the 2003 irrigation sites. Furthermore, some of the 23 pilot sites have extended their membership, canals and irrigated areas. Extension workers who learned the irrigation methods have been promoting them with other extension workers who did not take part in the project in 2003.

V Lessons Learned

5.1 Political circumstances and farmers' acceptance

As shown above, the irrigation schemes have been implemented by many sites and the sustainability of these schemes are positive. It is yet too early to say whether this irrigation project is successful or not. However, from the fact that there are many irrigation sites initiated by farmers themselves, that each site developed in 2003 improved facilities in some ways or expanded its area in 2004, and that each irrigation site alters slightly the proposed methods to build facilities, it can be said that the flexibility and local adoptability of the irrigation designs have great possibility to realize the untapped water resources of the country.

What made this project so locally adoptable by farmers? One of the reasons is that there were such political circumstances to accept this rather unusual trial. Severe financial constraints of the government and numerous past failures of irrigation projects had convinced the government to seek another approach. It is worth noting that the project at the first stage was significantly different from the present. According to the Minutes of Meetings on the Scope of Work signed by the two governments in November, 2001 mentions that the irrigation schemes are constructed ‘by the Government’ with local participation. In short, it was a project in which the government builds the irrigation facilities and the farmers operate and manage them after the handover. Many critics argue that a project framework is often difficult to change once the project has started and suggest the necessity of flexibility in project design\(^{(2)}\).

From the farmer's side, the project team in fact had difficulties to convince farmers to join the project in the beginning particularly in the area where other donors including NGOs provided direct incentives\(^{(3)}\). However, interviews with farmers at the irrigation sites reveal that persistent drought has been affecting smallholder farmers to such an extent that they were willing to experiment with anything as long as it serves food on the table\(^{(4)}\). A farmer at Ngoni irrigation site said that they were tired of waiting in hunger for someone to come to help them\(^{(5)}\).

5.2 Establishing a better knowledge basis

The strategy not to use any direct incentives contributed to the creation of a better knowledge basis. At an irrigation site\(^{(6)}\), villagers presumed that free seeds and fertilizer would be provided once irrigation projects were launched. In turn, the villagers reported exaggerated dry season stream flow to the project team. As a result, the stream dried up far before harvest and the site became the only one which abandoned whole crops within the 23 sites. In the case of Malawi, the problem of misleading information is also related to the dependency issue. Many donor organisations provide various direct incentives in different projects. Within the 23 irrigation sites, 13 villages had received some sort of direct incentives such as seeds and agricultural implements under a government programme called TIP or other development programmes. It is worth to note that where farmers have received such handouts in the past, they tend to expect such incentives from other development projects.

The farmers' understanding of the technology is also an essential factor to transfer a technology. As Orr et al (2004)\(^{(7)}\) point out, the lack of knowledge of farmers about the technology or related issues (e.g. gravity) can lead to the inappropriate alteration of the technology and, thus, to the low adoption of the technology. The project team made the irrigation methods simple and with several choices. The farmers could then contribute to inform the team of essential local information such as volumes of stream flows and what materials are readily available in their locality. The high degree of understanding was also succeeded by the leaflets and technical manuals specially developed by the Study Team. They use many illustrations and pictures so that even illiterate person can understand the methods. Together with the relatively equal partnership between the stakeholders, the Team's calibre certainly contributed to the establishment of a better knowledge basis.

5.3 An alternative approach

The participatory development approach cannot be achieved without such political circumstances and farmers' readiness. A technology cannot be altered into a locally adoptable way without an appropriate knowledge
basis. In the case of the small-scale irrigation project, the farmers innovation has been encouraged but only because there are socio-political and technical settings. However, these environments were not given for granted. As we shows in Table I, the approach taken by this project was similar to the farmer first approaches. The necessary settings were created and maintained by the project team professionalism.

What one can do in a single project is always limited. Indirect incentives are often difficult to implement within the scope of a project, whereas direct incentives can easily attract many farmers. However, it is also true that there are many things can be done within the same framework as the case shows. The negative aspects of direct incentives and the alternative approach in this project should be considered in future projects.

VI Conclusion

A shift from top-down approaches to participatory approaches has already occurred in the development thinking. However, more often than not, people are rather dragged into projects of no interest to them in the name of 'participation'. Direct incentives are frequently used to attract local farmers in many 'participatory' development projects but they conceal the real reasons farmers join the project. They have worked as a catalyst of the conventional development. This case study cannot be a solution for all but it has some significant elements that the development professionals to consider in the future.

Notes
(1) Regional offices under the Ministry of Agriculture and Irrigation. There are 30 RDPs nationwide. They are responsible for message dissemination, training of extension staff and farmers and provision of technical advice to extension workers.
(2) 'Dimba' is a flood plain or seasonal wetlands usually around streams. Some intermitted streams can also be called dimba and dry-season cultivation.
(3) Poverty in this report is defined as 'those whose consumption of basic needs is below the minimum level estimated at MK 10.47 per day (av. MK31.1 = 1 US Dollar in 1998).

References
5) Pretty, supra, p.169.
13) Interview with Mr Chikungu (Ministry of Agriculture an Irrigation), by email 2 May, 2004.
15) Interview with the irrigation club secretary at Ngoni irrigation site, on 28 June, 2004.
16) Mchiku irrigation site, Sanyu, (No, 2003), supra, p.3-7.

Summary: 本研究では、参加型開発においてしばしば用いられる無償供与（現金、食料、種子、肥料など）の問題点をめぐる最近の議論を概観し、マラウイの小規模農業事業を事例として代替手法のあり方について考察する。多くの援助事業で用いられている無償供与は、農民の援助募れを引き起こすという弊害がある。事例事業は、無償供与を一切排除することなく農民と対等な関係を構築し、灌溉技術を現地事情により即したものにする知識基盤を構築している。無償供与によって強引に技術を推奨するのではなく、移転に必要な環境を整える手法は、将来の援助事業に重要な意味を持っている。