

## **From government to farmer-managed smallholder rice schemes: The unresolved case of the Mwea Irrigation Scheme in Kenya**

### ***Le transfert de petits aménagements rizicoles: Le cas non-résolu du périmètre irrigué de Mwea au Kenya***

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#### **Abstract**

The Mwea rice irrigation system covers about 12,000 ha, north-east of Nairobi. The system was constructed between 1953 and 1973. From 1967 to 1998 it was managed by a government agency, the National Irrigation Board. The agency applied a strict system of management, under which the farmers had very little freedom of choice or control in crop management, marketing, land tenure, and other economically significant aspects. These policies of the government agency caused increasing discontent, leading ultimately to a takeover of the system by an organisation of the farmers in 1998. The takeover was accompanied by violence, and important assets are now not in the hands of the effective managing organisation. The paper describes these events, presents the findings of a recent survey of the opinions of various participants, and seeks to identify a possible way ahead for this scheme.

#### **Résumé**

*Le périmètre irrigué de Mwea, d'une superficie d'environ 12 000 ha et situé au nord-est de Nairobi, a été réalisé entre 1953 et 1973. De 1967 à 1998 sa gestion a été assurée par le Bureau national d'irrigation, une organisation gouvernementale. Sous le régime strict de gestion appliqué par le bureau, les exploitants avaient très peu de choix ou de contrôle concernant des pratiques culturelles, l'écoulement des produits, la foncière, et d'autres aspects d'importance économique. La politique du bureau a donné lieu à du mécontentement et a conduit, en 1998, à une prise de pouvoir violente de la part des exploitants. Du fait, une importante partie du patrimoine n'est plus sous le contrôle de l'organe effectif de gestion. Cette communication, tout en décrivant ces événements, présente les résultats d'un sondage récent d'opinion de divers participants en vue de tracer une possible issue pour cet aménagement.*

#### **1. Introduction**

Large-scale rice schemes the world over have had centralised modes of management, characterised by minimal involvement of farmers. This scenario has however greatly changed during the last two decades in response to a global wave of economic and political change that has raised farmers' awareness of their rights and entitlements. The change is reflected in increased demand by farmers for greater involvement in matters related to operations of the schemes. The Mwea rice irrigation scheme in Kenya, operated under this kind of system for over 40 years, is undergoing similar change.

This study traces the history of the scheme and management under the Ministry of Agriculture and the National Irrigation Board (NIB) and now the farmer co-operative. The study addresses conflicts between the farmers and the Board and analyses the current management by farmers.

##### **1.1 History**

The Mwea irrigation scheme, located at the foothills of Mount Kenya, is about 100 km to the north-east of Nairobi. Although only 6,000 hectares is under irrigation, the entire scheme covers 12,000 hectares (30,000 acres) and supports a population of over 50,000 people, organised in approximately 3,242 farm families living in 36 villages. It is the largest rice scheme in Kenya. The irrigated area is divided into five sections, namely Tebere, Mwea, Thiba, Wamumu and Karaba, covering 1,330, 1,260, 1,220, 1,165 and 1,070 hectares, respectively. Mwea and Tebere are the oldest and the largest while Karaba, located at the lowest end of the scheme, was the last to be developed in 1973. The scheme gets its water from two rivers, the Nyamindi and Thiba.

The scheme was developed using captive Mau Mau labour after the declaration of a state of emergency in Kenya in October 1952 (Njihia, 1984: 4, quoted in Turner et al. 1997). (The Mau Mau were Kenya's freedom fighters through whom the country gained its independence from the British). The scheme was managed by the British colonial government until 1963, when Kenya gained its independence, after which it was handed over to the Ministry of Agriculture. After the establishment of the National Irrigation Board (NIB) in 1967, this Board immediately took over its management. In 1998, a farmer co-operative, the Mwea Rice Growers Multi-purpose Co-operative Society (MRGM) took over the scheme's management. The MRGM had been formed in 1993 through a split of the farmers' giant organisation, the Mwea Amalgamated Rice Growers Multi-Purpose Co-operative Society Limited.

During its tenure, NIB's Board membership excluded genuine farmer participation. For example, the membership consisted of Directors of Agriculture, provincial representatives (from the provinces in which the scheme exists) appointed by the Minister of Agriculture but proposed by the Provincial Agricultural Board, the Director of Water Development, Chairman of the Water Resources Authority, Permanent Secretaries of the Ministries of Finance, Treasury and Economic Planning, and three Ministerial appointees with expertise considered useful to the Board. Although the provincial appointees could in principle be assumed to represent the interests of the farmers, the farmers had no say in their selection.

Management of the scheme by the Board was guided by the Irrigation Act of 1967, Chapter 347 of the Laws of Kenya (Government of Kenya 1967) and reinforced by management regulations of 1977 (Government of Kenya 1977). The system that evolved from this legal structure was dictatorial and harsh. Because there was no real farmer representation in the Board, these regulations were implemented almost in full.

Mwea farmers responded to this exclusion through establishment of farmer lobby groups such as the Mwea Irrigation Tariff Co-operative Society (1964) which later changed its name to Mwea-Tebere Co-operative Savings and Credit Society Limited. In 1967, a sister society, the Mwea Farmers Co-operative Society was formed. Until 1981, the management and membership of these two associations remained the same. During that year, the two split, with each establishing its own management. In 1983, the two societies joined and formed a banking section under the name Mwea Amalgamated Rice Growers Co-operative Society Limited. In 1993, the giant society split again to form what is currently the Mwea Rice Growers Multi-purpose Co-operative Society Limited (MRGM) and the Mwea Rice Growers SACCO Society Limited. Although the two operate under two different sets of management, they work closely and may soon be amalgamated because they believe that it was the Board that kept them fighting (MRGM; Tsurruchi and Waiyaki 1995). The MRGM is the farmer body that took over the running of the scheme after the farmers took over the management of the scheme.

The areas of conflict between the Board and the farmers were myriad but key to these were the low producer prices, high cost of irrigation-related services such as seeds, fertilisers and chemicals, land tenure system that treated farmers as tenants and exclusion of farmers from the scheme management. Finally, the farmers radically and forcefully took over the running of the scheme in 1998. The takeover was marked by confrontation between the farmers and the Board, leaving behind destruction of infrastructure and loss of life. This study traces the historical events fomenting the radical change and analyses the current management system, its challenges and opportunities to forge ahead.

## **2. Study methodology**

The study methodology was both participatory and consultative using diverse information sources. Key stakeholders included rice farmers from three sections, Mwea, Karaba and Thiba, including women, men and young people, the Central Committee of the Mwea Rice Growers Co-operative (MRGM) and the technical staff, the National Irrigation Board (NIB) management and the field managers, rice millers and rice merchants.

Criteria for selecting the study areas included age of the section of the scheme and access to irrigation-related services such as water. On the basis of these criteria, Mwea, Thiba and Karaba sections were selected. Both Mwea and Thiba are well watered while Karaba is most disadvantaged

in terms of access to irrigation water. In terms of age, Mwea scheme was the first to be established (1952), while Karaba is the latest (1973).

Within the sections, discussions were held with mixed groups of men, women and young men. This was contrary to the original design that envisaged group discussions with men, women and young people separately. Rice farmers rejected this format on account that all information relating to this change was public information and all individuals, irrespective of age and gender had a voice in this matter. Perhaps not so explicitly stated was the fact that they were suspicious of outsiders and the suggestion of working with different groups was seen as "divisive." To the satisfaction of everybody, the suggested system worked out well.

### **3. Management of the scheme by the National Irrigation Board (NIB)**

#### **3.1 Summary of issues as perceived by the NIB**

Consultations were held with the NIB senior management of the scheme and technical officers. The managers acknowledged the undemocratic mode of management, which, although perhaps viewed as necessary at the beginning, had failed to change with the times. A senior manager did however indicate that discussions on possible changes had gone on within the Board for quite some time. For example, the Board had considered, as early as the 1980s, reviewing the Act to increase farmers' participation. As part of this initiative, workshops were held with stakeholders to define the areas of change, but this was never concluded.

#### **3.2 The Irrigation Act and Regulations**

The National Irrigation Board, established in 1967 through an Act of Parliament, Chapter 347 of laws of Kenya (GOK 1967), managed the Mwea Irrigation Settlement Scheme up to the end of 1998, when the rice farmers took over its management. Through the Act, the Board was supposed to conduct research, co-ordinate and plan settlement on irrigation schemes, and manage the production and marketing of crops produced in the schemes. In addition, the Board was mandated to impose a cess on all or any agricultural produce grown on a national irrigation scheme. According to the Act, the *"cess shall only be levied for the purpose of meeting the cost of services provided in the relevant scheme, and for which services no other direct charges are available or payable."* However, the cess levied in Mwea was in some cases used to subsidise other national irrigation schemes in the country, mainly Ahero and Perkerra. This transfer of rice profits from Mwea to other schemes was among the main sources of conflict between the Board and the farmers.

To support the Board in the implementation of this Act, Parliament developed regulations now contained in a Kenya Legislation of 1977, Legal Notice 68 (Government of Kenya 1977). The regulations were needed to help sustain the Board, which as a parastatal, had to be financially self-sustaining and had to do this through recouping its overhead costs from the farmers.

The regulations were harsh. The farmers were expected to comply with all instructions given by the manager on crop husbandry, branding, dipping, inoculating, herding, grazing or watering stock production and use of manure and compost, preservation of fertility of the soil, prevention of soil erosion; to deliver the crop after harvest and to manage the planting, felling, stumping and clearing of trees and vegetation and the production of silage and hay.

Farmers did not have permission to use equipment and machinery other than that provided by the Board, were provided with housing and were not allowed to erect own houses.

Any farmer who failed to observe these regulations would be *"guilty of an offence and could be liable to have his licence terminated by the minister on the recommendation of the manager (after confirmation by the committee) and the minister's decision will be final."* The Board specifically was responsible for flooding the paddy fields, rotavation (land preparation) of the fields using MIS tractor, providing seeds, supervision of production of seed by selected farmers, provision of fertilisers and determining the amount and timing of application, direct application of chemicals on the crop, clearing of canals, collection of rice after harvest, milling, and marketing at a price set by the Board.

To enforce these rules, the Board put in place necessary structures. For example, it maintained guards at strategic points within the scheme to screen farmers to ensure that no rice was smuggled

out of the scheme (farmers were officially allowed 12 bags of 75 kg per year for home consumption). These rules and regulations generated resentment and hostility between the Board and the farmers.

The farmers considered the management of the scheme by the Board harsh for a number of reasons. Confiscation of land for what was considered poor management, harassment of farmers for attempting to retain more rice than allowed and highly priced services were some of the areas of concern.

### **3.3 The socio-economic situation at Mwea**

The socio-economic situation of the people of Mwea did not improve during the NIB tenure, as reported by farmers and corroborated by a 1995 NIB/JICA socio-economic survey that indicated that farmers never managed to meet their basic households needs from the rice proceeds. The results of the survey indicated that an average farmer obtained a total yield of 83.5 bags per 4-acre (1.62 ha) plot. Of these, 10.5 bags were consumed by the family and the remaining 73 sold to the Board. From the expected income of KSh 75,150, the farmer finally received KSh 35,229 after deductions of KSh 31,420 (cost of materials) and KSh 8,501 for wages of hired labour<sup>1</sup> (Tsurruchi and Waiyaki 1995).

By the time of the survey, activity within NIB had been reduced to the minimum. The rice mill manager referred to the rice mill related activities as "dead." As a result of this inactivity, there were plans to send home on unpaid leave 75 percent of the 120 workers. At its peak, the rice mill had a staff complement of 120 regular staff and a similar number of casual workers.

## **4. Factors underlying conflict and takeover by farmers**

As recorded elsewhere, farmers' dissatisfaction with the centralised mode of management of the scheme is not new. Efforts by farmers to participate effectively in the management of the scheme are reflected in formation of farmer organisations since Kenya's independence in 1963. The relationship between the farmers and NIB was never cordial and the final takeover was radical, confrontational and therefore not legal. The factors and events that fomented the takeover included low prices, land tenure, lack of farmer representation in the management of the scheme, and, as described by farmers, the Board's lack of respect for farmers. Details of some of the farmers' grievances are captured in this paper.

The 1990s marked the height of NIB / farmer confrontations. In 1996, for example, there was a major confrontation precipitated by the Government's move to get the farmers sign new tenancy agreements that required them to deliver all rice except 10 bags, much less than in earlier tenancy agreements (12 bags). The 10 bags were supposed to meet the family needs for an entire year. A confrontation, led by 300 women, ensued, leading to police intervention and heightened riots. Young men hurled stones at the police, who moved away from the scene to avoid bloodshed (Nthiga, 15 July 1996, p.2; cited in Turner et al. 1997). This hostility continued, culminating in the 1998 takeover of the scheme.

An attempt to understand this confrontation better reveals that, on one hand, the farmers had genuine grievances such as low prices and the high-handedness of the Board, but on the other hand, farmers' actions were facilitated by a more open political environment brought about by the advent of the multi-party politics and liberalisation of many sectors including agriculture. This was a period when dissent was tolerated and Kenyans could speak openly without fear of detention and harassment. This too was a period of free information flow and interaction. For example, through the joint GOK/JICA research project in Mwea, farmers were trained on how to experiment with new crops such as soya beans. Farmers had also acquired skills on pricing and alternative market outlets. Those who produced soya beans and sold the crop directly to buyers (not through NIB) reported making KSh 270 per kilogram against KSh 27 per kilogram when sold through the Board.

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<sup>1</sup>Average bank exchange rate of the Kenya Shilling (KSh) in the years covered by this paper were: in 1995, US\$1 = KSh 51.62; in 1996, KSh 57.17; in 1997, KSh 58.92; in 1998, KSh 60.54; in 1999, KSh 70.42; and in 2000, KSh 76.28.

This was the background that led to refusal by farmers to deliver the 1998 crop and destruction of some of the key infrastructure such as the rice collection centres, leading to serious confrontation with the police and resulting in the death of two men. At the forefront of this change were young people, born and bred in Mwea. These young people had lived in poverty and misery and for them, the past was a bad dream and time for change had come. A young man of 23 years from Thiba proudly showed the study team new houses built by young men along the main Nairobi highway. The houses were said to have been constructed using proceeds from the *"jua kali,"* or unauthorised rice plots (building of houses and opening new land for rice were illegal during the tenure of the Board). During the take-over, this young man was said to have mobilised youth groups, personally commandeered a NIB lorry full of paddy and shared it out to Mwea residents. In his words, days of slavery were over. The following issues precipitated this takeover by farmers.

#### **4.1 Land tenure and land pressure**

Forty years after settlement in Mwea, farmers are still tenants. The farmers contest this status on two grounds. One, they have been in the scheme long enough to graduate from tenants to landowners and two, the farmers claim that this was never Government land. The land is said to belong to the nine clans of the Agikuyu people who live on the foothills of Mt. Kenya and they consider Government's claim on the land illegal. They see this land as rightfully theirs, a demand supported by the Central Province Parliamentarians, who are by and large in the opposition. This situation is further aggravated by Kenya's Succession Act, which does not recognise *"tenancy status"* currently held by Mwea farmers.

As a reaction to this discontent and land pressure, farmers have opened up new land bordering the Mwea Scheme for rice production, using the water system servicing the "official" scheme. There is genuine land pressure as the 4 acres (1.62 ha) allocated to families long ago in 1953 are no longer adequate for the growing size of families. The unauthorised rice fields are popularly known as *"jua kali,"* which literally means "hot sun" and applies to local informal and low-technology industries in which many Kenyans engage.

#### **4.2 Small, poor and highly priced housing**

The farmers live in small houses built for them by NIB, some as far back as the early 1960s. Because the scheme regulations do not allow farmers to build their own houses, the current family sizes have overstretched the current space. The regulation states that no farmer is allowed to *"construct buildings or other works of any kind on the holding or elsewhere in the scheme without prior consent in writing."* Farmers have been unhappy with this set up because the houses are too small, are of poor quality and overpriced. The houses have mud walls and tin roofs. The houses had a cost of KSh 12,972 (\$160) and the farmers were expected to make these payments to the Board in instalments of KSh 432.40 per year for a period of 30 years.

#### **4.3 Water use restricted to rice production**

The scheme regulations restrict irrigation water to rice production, although rice is not a high-valued crop when compared to horticultural crops such as tomatoes. The manager of the scheme had powers to destroy other crops if grown with water from the scheme. The regulation states that *"the manager shall have the power to order the destruction of any crops planted in contravention of his instructions or of the provisions of these regulations. All costs incurred during the destruction would be recovered from the rice delivered by the respective farmer."* In the latest petition to the Attorney General for repeal of the Act, this issue is underscored. Farmers complain that they *"are chained and tied up to rice farming all their lives as they devote their full personal time and attention in the cultivation of a crop ordered by the Board."*

Issues of transparency in use of water were raised. For example, it was said that horticultural production upstream using irrigation was taking place with full knowledge of the NIB management, and that the management was in fact collecting fees from those farmers who were pumping water from NIB canals. Besides, NIB had on a pilot-trial basis introduced a second crop of soya beans, grown in the off-season and at one point had expanded this program to 500 acres (200 ha).

#### **4.4 Farmers lack of control over their product, rice**

According to the regulation, families could only retain 12 bags of unprocessed paddy (75 kg each) after harvest. This amount was expected to feed the family for a whole year. To ensure that the regulation was adhered to, the Board engaged guards to screen the farmers as they left the fields. Contravention of this regulation saw many farmers in police cells. One woman from the Mwea section graphically narrated her ordeal in police cells for allegedly "smuggling" 4 kg of rice. As an illustration of farmers' desperation, they smuggled rice for home consumption in gum-boots and tea flasks on their way home from the farms. There were however many security checks and it was not easy to escape them.

#### **4.5 Regulations against livestock rearing**

Rearing of livestock in the rice scheme was prohibited. The regulation states that "*a licensee shall not keep on his holding any stock other than those specified in his licence*" otherwise the manager had authority to confiscate and sell such additional stock. This regulation was, however, not very aggressively pursued and herds of cattle and other small stock are a common sight in the area.

#### **4.6 Sons over 18 years to leave the scheme**

One of the regulations required that sons over 18 years of age leave the scheme. Although this regulation was never implemented, the farmers are still very incensed by its very presence in the Act. They saw it as a way of undermining the culture and the family unit, which places a high premium on sons who inherit family assets to ensure continuity of the family name.

#### **4.7 Low prices and subsequent poverty**

In 1998, the price paid out to farmers for paddy stood at KSh 17.50 per kilogram. In 1998 (at the height of the conflict), the farmers had demanded an increase to KSh 20.00 per kg. Once processed, rice fetches KSh 65-70.00 per kg.

#### **4.8 Management of the rice mill**

The rice mill is jointly owned by NIB (55%) and the Farmer Co-operative (45%). The farmers, however, claim that NIB has been running the mill for many years without dividends to the farmers and in their view, it is time for them to run it for a similar period. However, as the situation stands, the mill is fully in the hands of NIB and it is one of the assets farmers have no access to.

### **5. Management of the scheme by the farmer co-operative: changes and challenges**

The farmer co-operative has been in operation for close to 2 years now, during which period, management changes have been instituted while new challenges have emerged as the analysis below reveals.

#### **5.1 Changes**

On taking over, the society moved fast to relax some of the contentious regulations used during the tenure of NIB. Unlike the time of the Board, when farmers could only retain 12 bags of paddy, they now were now free to keep anything in excess of the mandatory 40 bags of paddy that must be taken to the co-operative to meet the cost of services rendered. They can sell the rest directly to the millers for quick cash if they choose. The many barriers and policing of rice movement are things of the past. A few farmers have also experimented with two crops of rice in a year although the results have not been encouraging. A new weed, similar to the water hyacinth, has taken root in some canals within the Mwea section. The technical staff attributes this to double cropping.

##### **5.1.1 Governance**

The management structures are more democratic than during the period of the Board. The top management of the society consists of a Central Committee of nine members democratically elected



by the farmers, staff members and unit leaders. The nine members represent the five sections of the scheme i.e., Tebere, Mwea, Thiba, Wamumu and Karaba. In order to maintain an odd number of members for voting purposes, each of the four sections is represented by two members while one section has one representative (the section with one representative will in the next round have two members). A critical concern in this constitution is the high level of gender inequity as this committee has only one female member despite the fact that women are the key rice producers.

Reporting to the nine section leaders are 68 unit leaders distributed through the five sections. In terms of numbers, Tebere has 17 unit leaders, Mwea 17, Thiba 12, Wamumu 10 and Karaba 10. Again, out of these 68 unit leaders only 3 are women.

The unit leaders are the frontline workers who link farmers with the both the management committee and the technical teams. They monitor views, needs and constraints for onward transmission to the section leader and finally to the society. As a back-up, each section has a technical officer, employed by the society. It is important to note that a few of the technical staff are "defectors" from NIB who have had years of experience in operating the canal system.

Included in the structure is an Agricultural Sub-Committee which handles technical issues and is co-ordinated by the Scheme Manager. This sub-committee consists of Agricultural Officers and Irrigation Engineers.

What the farmers considered as very different from the time of NIB was transparency in the running of the society. For them, this was central to its survival and sustainability. To maintain this transparency, farmers had put in place appropriate mechanisms. One such mechanism was a "*shadow management committee*" in each of the five sections. The committee checks and evaluates the work of the official central committee and has, on the basis of this evaluation, dismissed one committee member for non-performance in the last 2 years.

### 5.1.2 *Better incomes and improved welfare*

Price for paddy stood at KSh 17.50 per kg in 1998, but at the time of the survey the price had increased to KSh 30 per kg. Other indirect gains included reduced cost of services provided by the co-operative. Farmers and millers in Wang'uru town indicated that the change had brought with it improved incomes not just for the farmers, but also for other actors within the industry. Some of the proxy indicators for this improvement included better dressing, ability to pay school fees, and improved housing. One man from Mwea section showed off a suit he was wearing, a suit he said was his first since settling in Mwea over three decades back. He attributed his ability to buy such a suit to the change of management. Similarly, young men from Wamumu section of the scheme (who had fully participated in the riots) showed off their new houses, which they had never dreamt of owning.

For the millers, this new change has transformed their livelihoods. In Wang'uru alone, there are more than small 100 mills operating either independently or leased by the MRGM. The millers charge KSh 1 per kg of paddy milled, and in addition retain the bran from the paddy. This bran is used in the manufacturing of animal feeds and fetches a good price for the millers. The millers admit that life has changed in Mwea and Wang'uru. Farmers interviewed in late 2000 felt that most people were now able to generate some income for themselves, an aspect said to have reduced thuggery and insecurity to a minimum. However, by May 2001, there was less optimism in the new management as some farmers had not been paid for their rice deliveries of two seasons.

## 5.2 *Challenges and opportunities*

While certain things have worked well, the society knows that there are daunting technical and financial challenges ahead of them. The human capacity is overstretched, they have limited equipment and machinery and virtually no capital for operations. Banks are also unwilling to advance the MRGM loans in view of uncertainties on the future of the scheme.

### 5.2.1 *Maintenance of the scheme*

One of the remaining greatest challenges is effective management of the scheme. The level of financial and technical resources needed to keep water running, canals clean and plots watered to the

right levels is prohibitive. Because NIB holds a substantial part of these resources, the hands of the society are somewhat tied up. Some of the specific challenges are discussed below.

### *5.2.2 Inadequate human capacity*

The Co-operative Society has an extremely small technical workforce, which is way below the threshold for effective maintenance of the scheme. Each irrigation block/section has only one officer and none of them has an office. Certain key functions, such as water management and research, have not been established. The absence of systematic research, which is necessary to ensure regular supply of good seed, threatens the very foundation of the scheme. Plans for water distribution (particularly during periods of shortage) and for maintenance to allow equitable water distribution are necessary and need to be prepared by well-qualified staff.

### *5.2.3 Equipment*

The society is very thin on equipment since NIB took away essential equipment such as tractors and excavators. Research equipment is still at MIAD but out of reach of the society. Some of the commendable efforts by the society in this regard include acquisition of 20 new tractors and sub-contracting out some of the essential services to individuals outside the scheme as discussed below.

#### *Sub-contracting tractors*

The society was sub-contracting out services to independent contractors to supplement its internal capacity. The society pays for the service but deducts the cost from the farmers' proceeds. In the process of this struggle, the society has learned that it is cheaper and more efficient to contract out this service than to manage it.

#### *Leasing of rice mills*

At the time of this survey (August 2000), the society had no functional rice mill of its own. To mill the rice delivered by farmers, it leased rice mills from independent contractors. At peak time, it leased over 100 rice mills. The Society saw this arrangement as a contingency while awaiting the installation of a 3-ton per hour rice mill it had just acquired. The society also revealed its plans to acquire more mills if the stalemate over the jointly owned rice mill was not quickly resolved. The society confirmed that this was one service it was going to manage in order to maintain high quality of rice. The current quality of rice from the small mills is much lower than what was produced by NIB, a situation that automatically creates a marketing problem, particularly since imported rice of good quality is freely available at competitive prices in the local market.

### *5.2.4 Production of seeds*

This is a highly specialised area. During the NIB tenure, a number of farmers had been contracted to multiply seed for distribution to the rest of the farmers during planting season. This ensured uninterrupted supply of good quality seed. When the society took over the running of the scheme, they used the same "seed-bulking" farmers for the 1999 crop. However, the farmers are no longer producing seed, leading to non-availability of good seed and increased use of lower quality seed.

### *5.2.5 Research*

This emerged as one of the weakest areas in the current management. The society fully recognised this fact and was making efforts to address the matter. The acquisition of 20 acres freely made available by farmers for field trials was a demonstration of this commitment.

### *5.2.6 Working capital*

Running the irrigation scheme is an expensive undertaking. The co-operative requires a minimum of KSh 300 million upfront to run the scheme. These funds are needed to meet the cost of fertiliser (70 million), land preparation (30 million), pest control and gunny bags (20 million) and farmers' payments amounting to close to 150 million.



Consistent efforts by the society to get credit from commercial banks have not been successful. The society attributes this to interference by the Government. In the midst of these financial difficulties, the society has occasionally managed to negotiate some workable options. For example, in 1999, the society identified a rice buyer who paid KSh 200 million when the crop was still in the field, with the promise of further payment when the crop was harvested. By doing this, the buyer was able to counter competition over a high-demand commodity. This agreement helped the society to meet some of its financial obligations.

### 5.2.7 Human health

Malaria and intestinal schistosomiasis (bilharzia) are common diseases in the Mwea irrigation scheme. The NIB used to have a surveillance team to monitor and ensure that the two diseases did not attain epidemic proportions. This was partly achieved through treatment of irrigation canals with molluscicides to kill carrier snails of bilharzia, and the provision of health credit facilities. Currently there is no organised treatment of canals with anti-snail chemicals. Transmission of bilharzia might, therefore, rise again to the high levels common before NIB instituted regular control measures. This has major implications on productivity.

## 6. Conclusions and recommendations

### 6.1 Conclusions

A change of management has occurred at the Mwea Irrigation scheme. The National Irrigation Board is currently almost non-functional despite the capacity it commands in terms of technical expertise, facilities and political support. There are however divided assessments on the nature of this change. According to the farmers, this change is final and there is no going back. The use of the term “divorce” to illustrate this change is enough to conclude the position of the farmers. The Government, while acknowledging this change, still sees its role in the scheme and considers itself the “*de jure*” manager.

The Government continues to control assets that are core to the operations of the scheme, e.g., the rice mill, the research facilities at MIAD and the paddy collection centres, while the Irrigation Act is yet to be repealed. It is, therefore, clear that while the farmers are functionally in charge of the scheme, Government still has a strong hold on the critical elements of the scheme.

Despite the challenges faced by MRGM, some substantial positive changes have taken place. The management system is apparently more democratic and sensitive to the plight of farmers, prices paid to farmers have almost doubled, while opportunities for farmers and the people of Mwea have increased (farmers can sell the bulk of their paddy to independent rice millers, thus creating a new category of beneficiaries within the scheme). In addition, farmers have opened up new land for rice on their own initiative. On the whole, the socio-economic status of the entire area is reported to have improved.

While performance in certain areas has been commendable, there are major challenges. The society’s technical team is inadequate, lacks badly needed operational capital and facilities for research and seed multiplication, has limited milling capacity and lacks critical machinery and equipment such as excavators that are meant to keep the canals free of weed and silt. Innovation and flexibility has however helped the society in the face of these constraints. For example, the society has leased small rice mills from independent contractors and has contracted out services such as rotavation to supplement its 20-tractor capacity.

What is clear is that there is unfinished business between the Board and the farmers. The farmers continue to put pressure on the Attorney General to review the Irrigation Act while demanding the handover to them by the Board of the jointly owned rice mill and the idle infrastructure at the scheme (paddy collection centres, the MIAD Research Capacity). These emerge as clear areas of dialogue.

## **6.2 Recommendations**

1. Both MRGM and the Ministry of Agriculture need to initiate meaningful dialogue to resolve pending issues such as the review of the Irrigation Act. At the functional level, matters relating to joint assets such as the rice mill and the paddy collection centres among others should be resolved.
2. Review and appropriately strengthen the current capacity of the farmer co-operative society. While this should be preceded by a clear analysis of core functions and capacity requirements, visible gaps include equipment and machinery, operational capital and staffing.
3. The society needs to develop a strong operational system to improve the efficiency of the farmer co-operative. The society has embarked on certain aspects of this such as computerisation but more needs to be done.
4. Strengthen the already initiated democratic process to ensure effective farmer representation and equity in terms of gender and other social characteristics.

## **7. Researchable areas**

1. **Technical.** A new weed that resembles water hyacinth has taken root in some canals in Thiba. Although not currently a threat, it is important to establish its nature and implications.
2. **Socio-economic changes.** It is important to empirically establish the nature and scope of socio-economic changes that are said to have occurred since the farmer co-operative took over the running of the scheme.
3. **Organisational systems.** While the current management system has assisted the society to begin, a more rationalised system in terms of strategic direction and support systems is key to effective management. To be included in this process are the computerisation of the system and management capacities at different levels.

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## ACRONYMS

FO	Farmer Organisations
GOK	Government of Kenya
ICIPE	International Centre for Insect Physiology and Ecology
IFPRI	International Food Policy Research Institute
IWMI	International Water Management Institute
MIAD	Mwea Irrigation Agricultural Development Project
MIS	Mwea Irrigation Settlement Scheme
MRGM	Mwea Rice Growers Multi-Purpose Co-operative Society
NIB	National Irrigation Board
PMC	Project Management Committee
SACCO	Savings and Credit Co-operative

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