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Strategies for Revitalizing the Pyrethrum Industry in Kenya

Pyrethrum is the most unique and widely used bio-pesticide. At a low dosage, it quickly kills a wide range of insect pests found in human dwellings, stored grain and other foodstuffs. It is also of low toxicity to human beings and other mammals, and environmentally-friendly because it rapidly degrades in sunlight and does not accumulate in food chains or groundwater. In Kenya, pyrethrum supports the livelihoods of over 200,000 households with smallholdings of about one acre spread over 21 districts in Eastern, Central, Nyanza and Rift Valley provinces. International competition, especially from Tasmania, Tanzania and Rwanda has stiffened and is eroding Kenya's global market dominance in pyrethrum production. Kenya has been the leading global pyrethrum producer for over four decades. However, domestic production has drastically declined.

Pyrethrum production in Kenya has dropped significantly from 28,643 tonnes in 1983 to less than 3,000 tonnes in 2005. The pyrethrum export volume and value declined by 69 per cent from 850 tonnes worth close to Ksh 1.5 billion in 1983 to 265 tonnes valued at about Ksh 500 million in 2005. The relative importance of the crop in terms of foreign exchange earnings has dropped drastically from fifth among key sub-sectors in 2002 to beyond ten in 2005.

Kenya's position as a world leader in the production of pyrethrum is threatened by erratic and unreliable supply, mainly due to institutional challenges such as non-payment/delayed payments to farmers by the Pyrethrum Board of Kenya. This has resulted in massive uprooting of the crop in favour of stable farming enterprises such as tea, horticulture and dairy. Most of the local pyrethrum-based industries have closed down. Consequently, all the leading aerosol insecticide brands such as Doom, Raid and Johnson IT that some years ago were locally manufactured are now imported from Australia, Belgium, Indonesia, Malaysia and the Netherlands. Some of the imported formulations pose serious environmental challenges, as they do not contain pyrethrin as the active ingredient. The closure of the pyrethrum-based industries has resulted in idle installed machinery, and loss of employment and income opportunities by majority of poor smallholder farm-households whose livelihoods greatly depended on the crop. There is urgent need, therefore, to identify and implement strategies that would revitalize the pyrethrum industry.

Key Production Constraints

In recent years, the government has demonstrated notable interest in supporting reforms in the pyrethrum sub-sector. A draft policy on liberalization of the pyrethrum industry was prepared in 2004/2005 but this is yet to be finalized. The government has also recently provided some funds for payment of farmers' arrears, in addition to replacing the Board members of the Pyrethrum Board of Kenya. Despite these measures, an analysis of the pyrethrum industry reveals that the industry is still riddled with several problems.

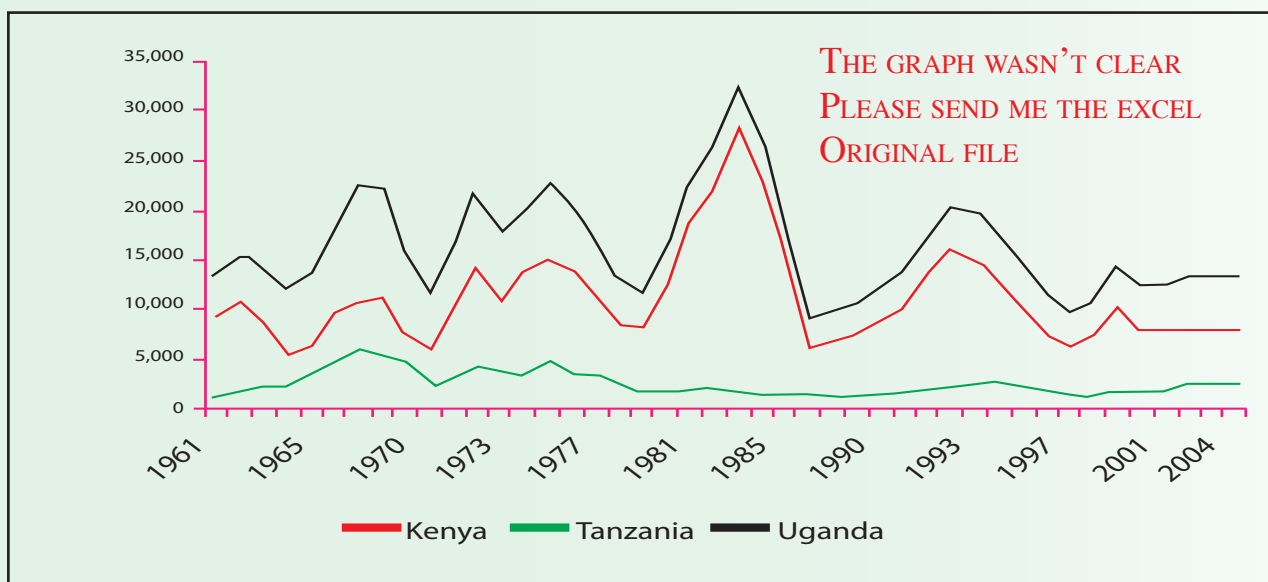
Delayed payments to farmers

Delayed payment is the most widespread constraint in pyrethrum growing areas as it affects the majority of farmers. In some cases, payments have been delayed for as long as three years and this has seriously discouraged farmers from continuing with pyrethrum production. Payment of the farmers' arrears would increase the probability of increasing pyrethrum production by about 89 per cent.

Competition with other crops for land

Competition with other uses for arable land poses a major constraint in pyrethrum production. In terms of enterprise competitiveness and land use decisions, pyrethrum faces fierce competition from tea, horticulture, dairy, maize, potatoes,

Global pyrethrum production trends, 1961-2004



beans, onions and spinach, although this varies from one area to another. About 80 per cent of the farmers do not have adequate land for expanding pyrethrum production while some 24 per cent have been affected by land clashes (especially in Molo) and have consequently lost their farms, or their crops were destroyed during recurrent clashes. Land scarcity reduces the probability of increased pyrethrum production by about 86 per cent, holding other factors constant.

Labour scarcity

Labour scarcity is a critical constraint especially in the face of competition from other crop and livestock enterprises, besides profitable non-farm sectors such as Micro, Small and Medium Enterprises (MSMEs). About 79 per cent of farmers experience labour shortages during transplanting, weeding, picking and drying of pyrethrum flowers. Due to labour constraints, most farmers experience delays in pyrethrum flower collection and transportation from their farms. At the grading stage, quality loss due to labour shortages reduces pyrethrin content and, thus, farmers' income.

Unavailability of suitable high-yielding planting material

The volume of high-yielding planting material is inadequate to meet growers' demand. Therefore, most farmers use traditional local varieties, resulting in poor yields and low pyrethrin content. About 72 per cent of farmers use their own splits or those borrowed from neighbours. Most farmers complain that unavailability of planting material is a major drawback to increased production of pyrethrum. The genetic composition of the planting material determines up to 90 per cent of the pyrethrin content and, therefore, the value of the crop. This underscores the importance of using suitable planting material. Farmers also complain that materials currently distributed are less adaptable to certain areas, leading to low yields.

Lack of farmer participation in determination of pyrethrin content

Although profitability of pyrethrum production largely depends on the pyrethrin content of the dry flowers delivered by farmers, pyrethrin content is unilaterally determined by the Pyrethrum Board of Kenya. The non-involvement of farmers has led to complaints over blurred measurement systems and manipulation of pricing mechanisms. Involvement of farmers, probably through elected representatives, would ensure fair pricing and better incomes from their crop. Involvement of farmers in determination of pyrethrin content would raise the probability of increasing pyrethrum production by about 55 per cent, holding all other factors constant.

Inadequate access to credit

Access to credit enables farmers to prepare land, procure suitable planting material (clones) and also purchase fertilizer for increasing productivity. Many farmers experience problems of inadequate credit and irregular/untimely supply of credit from small lending groups/unions. Medium-sized and large co-operative societies are deemed better placed to address resource constraints that bedevil smaller organizations. The major problems that farmers experience with their co-operative societies relate to delayed payments, misuse of funds, poor representation and unskilled leadership. It has been estimated that access to credit would raise the probability of increasing pyrethrum production by 68 per cent.

Inadequate agricultural extension services

Access to agricultural extension services enables farmers to get the necessary skills and incentives to adopt new varieties. This is critical because the value of pyrethrum is heavily dependent on the type of seedlings planted, and crop husbandry and processing practices, yet most farmers commonly split planting materials instead of using fresh seedlings. About 66 per cent

of pyrethrum farmers have no access to extension services. Public research and extension personnel are often stationed far away, while private service providers are costly and do not guarantee better quality.

Key Marketing Concerns

Taxation and cess management

The Pyrethrum Board of Kenya collects levies from farmers to be devoted to development of rural roads in pyrethrum growing areas (1% of the total value of flowers sold by each producer) and capital development (6.6 cents from every kilogram of flowers). However, most roads in the pyrethrum growing zones are inaccessible and are in deplorable state of neglect, especially during the rainy season. In terms of capital development, there is scarcely any evidence that much has been achieved with regard to upgrading technologies used both in the production and processing of pyrethrum products.

The Board is largely operating with old processing plants (more than 40 years old) with processing efficiencies of less than 75 per cent. The main problems identified by farmers with regard to cess management relate to diversion of funds (mainly by local authorities) into non-priority areas, over-taxation and lack of farmer representation in the Pyrethrum Board of Kenya.

Limited value addition and threats from cheap imports

Kenya exports nearly all its pyrethrum products as crude pyrethrin—only about 1 per cent is processed for the domestic market. Critical factors constraining value addition in the pyrethrum industry include: use of old and inferior planting material; poor crop husbandry practices; old and inefficient processing plants; unfavourable tax regimes; low diversification of products and high cost of pyrethrum products.

Due to low value addition on local pyrethrum, relatively cheap imported finished aerosols pose a major threat to the locally-processed pyrethrum products. It is estimated that the cost of packaging material constitutes about 75 per cent of the total cost of domestic aerosol insecticide. Imported packaging material for fabrication of aerosol cans are taxed at between 10 per cent and 25 per cent import duty and a Value Added Tax (VAT) of 16 per cent. On the contrary, imported finished aerosol products attract a duty of 5 per cent and no VAT. The current discrepancy in the tax structure clearly discourages local value addition and local formulation of products by Kenyan manufacturers.

Failure to take advantage of emerging markets

The traditional buyers of most of Kenya's pyrethrum have been the USA and most of Western Europe (e.g., Germany, Netherlands). With growing world population and changes in market preferences, Asia is now emerging as a major consumer of pyrethrum products. Demand for pyrethrum extracts in emerging Asian markets is relatively higher than

in the traditional European and American markets. Besides, Asian countries have varied pyrethrum-product preferences and less stringent trade restrictions, but the Kenyan pyrethrum industry has not yet taken advantage of this. Moreover, Kenya has not developed a strong capacity in international trade negotiations.

Kenya is yet to fully utilize the organic farming sector especially in view of the fact that most of Europe accepts only insecticides of natural origin that are without danger for users, consumers and the environment. The country has also not adequately utilized opportunities presented by global funds particularly with regard to control of malaria using natural pyrethrin-treated nets instead of synthetics. Exploitation of these opportunities would significantly increase earnings from pyrethrum, thus encouraging farmers to expand production.

Weak institutional framework

Non-conformity of the Pyrethrum Act (CAP 340, Laws of Kenya) to a liberalized economic environment is a major institutional impediment to sectoral competitiveness. The Act places both regulatory and commercial functions under the Pyrethrum Board of Kenya, thus conferring monopolistic powers on the Board to purchase dry pyrethrum flowers from farmers, process and market the resultant pyrethrum products. This has caused many problems in the industry, the key ones being delayed payments for farmers, low pyrethrin content and high cost of pyrethrum products. It has almost led to collapse of the pyrethrum industry and many stakeholders have been calling for reforms in the industry.

Another institutional weakness lies in the power of research and development in seed, which is vested in the Board. Pyrethrum research is poorly co-ordinated and there are many overlapping activities between the Pyrethrum Board of Kenya and Kenya Agricultural Research Institute (KARI) at the National Pyrethrum Research Station (Molo) and various experimental sites in several districts.

Alleged 'Exploitation' by middlemen

Despite providing an alternative market to farmers and addressing some of the challenges experienced by farmers who sell directly to the Pyrethrum Board of Kenya or through co-operatives, middlemen are alleged to often offer low prices and fail to pay in some instances. Additionally, farmers who sell to middlemen are unsecured from violation of their rights due to lack of legal protection to govern their informal marketing arrangements.

Policy Recommendations

Review legal and regulatory framework

The Pyrethrum Act, Cap 340, governs the pyrethrum industry in Kenya. The Act, however, has conferred too much power on the Pyrethrum Board of Kenya. There is need to review the Act in order to inculcate democratic ideals and participatory

stakeholder representation in the governance structures of the pyrethrum industry. The government should hasten the finalization of the draft policy on liberalization of the pyrethrum industry and review of the regulatory framework.

The new policy should enable entry of investors and other interested players in research, production, processing and marketing. It should also provide for restructuring of the Pyrethrum Board of Kenya to focus mainly on regulatory functions that would contribute to sustainable development of the pyrethrum industry. The policy should also provide for the establishment of a company to carry out the marketing functions currently undertaken by the Pyrethrum Board of Kenya.

Initially, the government may have a slight shareholding majority in the marketing company but arrangements should be made to transfer, possibly within five years, majority of the company ownership to farmers and other interested investors.

The new policy and regulatory framework should also provide for:

- a) A separate institutional base to spearhead research in pyrethrum in collaboration with a reformed Pyrethrum Board of Kenya. However, a marketing company should be established to carry out research on processing technologies and product development;
- b) Establishment of enforceable contracts at all levels of the pyrethrum value chain, with penalties for non-payment or delayed payment to farmers;
- c) Strengthening monitoring systems on the quality of both local and imported aerosols; and
- d) Streamlining and regularizing both internal and external auditing of financial resource utilization in all pyrethrum institutions.

Improve enterprise competitiveness

In order to increase productivity and enhance the competitiveness of locally-produced pyrethrum products, pyrethrum farmers should be encouraged, through responsive extension services, to plant varieties with high pyrethrin content. The government could adopt a co-operative extension provision system to strengthen stakeholder responsibility in skill provision and acquisition (for example, a joint scheme funded by farmers, traders, processors, government and NGOs).

Farmers should be trained and involved in determining pyrethrin content, and should be provided with credit for purchase of inputs either through the Agricultural Finance Corporation, the proposed pyrethrum marketing company, co-operative societies or other financial institutions.

Take advantage of emerging global opportunities

In order to benefit from opportunities in emerging markets for natural pyrethrum products, the government and the proposed marketing company should develop a dynamic pyrethrum marketing strategy that involves continuous training of local players in the pyrethrum industry on emerging market challenges and provision of demand-driven up-to-date market information system, among other critical trade facilitation functions. The proposed marketing company should aggressively promote Kenyan pyrethrum (as an environmentally-friendly product) in the emerging markets, especially in Asia, besides the USA and European Union. The company should also aggressively market more and diversified natural pyrethrum-based Malaria drugs.

Finally, the government should also promote local processing and packaging of diverse pyrethrum products by lowering import duty and removing Value Added Tax on imported raw materials. In addition, import duty on imported aerosols and other pyrethrum-based finished products should be increased from the current 5 per cent.

About KIPPRA Policy Briefs

KIPPRA Policy Briefs are aimed at a wide dissemination of the Institute's policy research findings. The findings are expected to stimulate discussion and also build capacity of public policy makers in Kenya. KIPPRA acknowledges support from the Government of Kenya, the European Union (EU), the African Capacity Building Foundation (ACBF), and all other development partners who have supported the Institute's activities.

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