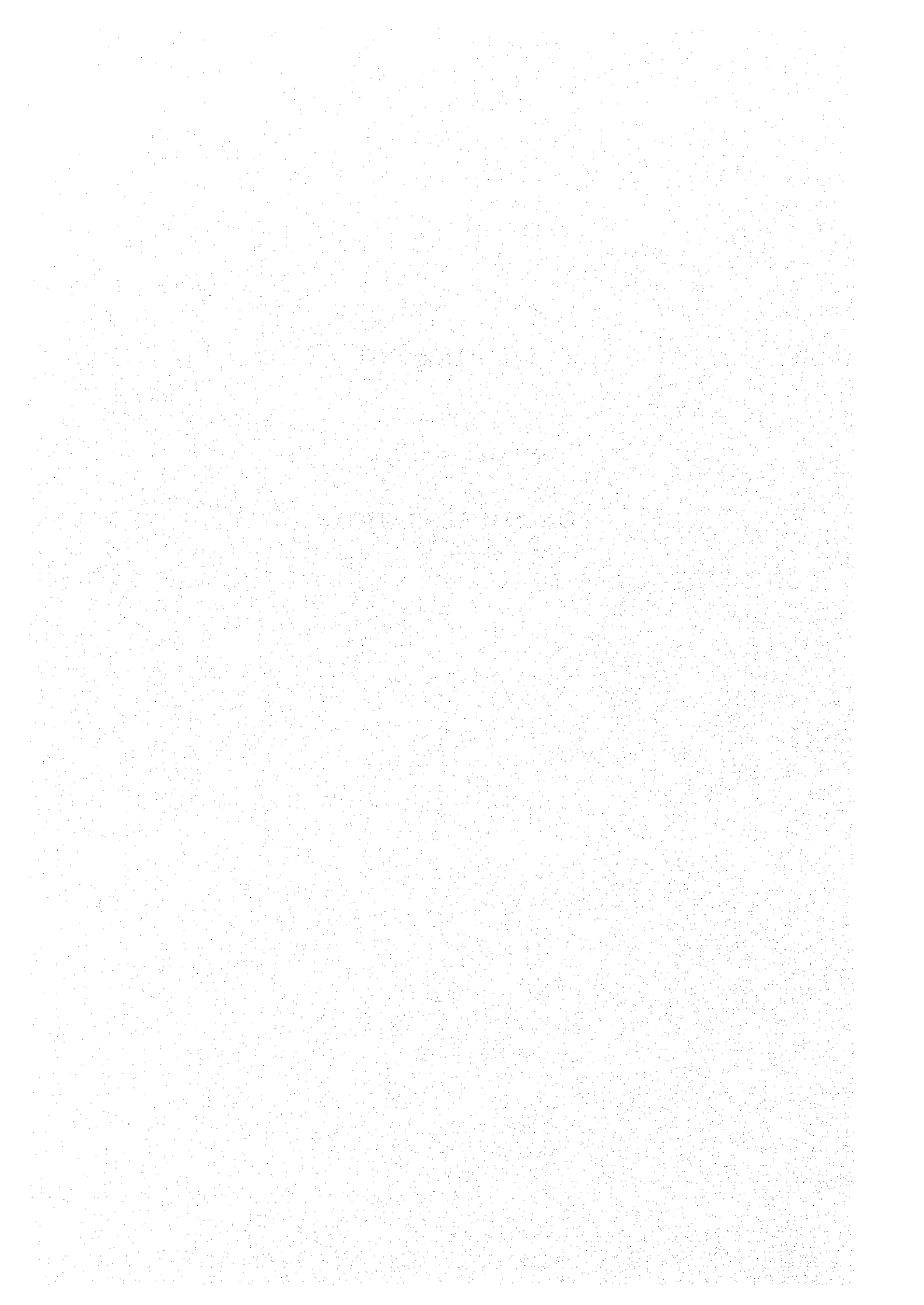


CHAPTER XIV.

RECOMMENDATIONS



CHAPTER XIV. RECOMMENDATIONS

14.1 Aspects of Administration and Developments Policy in Agriculture

- a) Under the prevailing Kenya's economic and financial situations, the project is important and should be implemented to support one of ASIP's goals of increased role for the private sector in Kenya's agriculture inclusive of smallholder irrigation schemes and a reduced dependence on government.
- b) Basic development policy of the smallholder irrigation schemes is participation of beneficial farmers under the jurisdiction of MOALD, specially Irrigation and Drainage Branch (IDB) in Land Development Division (LDD). Therefore, self-awareness and responsibility for the project implementation by IDB staff in MOALD are strongly requested in the project.
- c) The most critical constraint for development of smallholder irrigation projects in Kenya is the inadequate budgetary provision by government for recurrent and development expenditure. Therefore, the government should take necessary actions and arrangements to secure the required funds for irrigation development including sourcing from foreign donors.
- d) At the relevant provincial and district-office level and in collaboration with the local community, the administration should be actively involved in better utilization and conservation of river resources including protection of river banks and prevention of illegal abstraction of irrigation water.
- e) The provincial administration should facilitate local community initiatives aimed at mobilizing community financial resources for installation of irrigation infrastructure.
- f) For the development of smallholder irrigation schemes located in the foothills of Mt. Kenya existing policy guidelines on smallholder irrigation development should be strictly adhered to by all agencies involved in irrigation (Government and NGOs). In particular, consideration; i) participation of farmers' groups on a cost-sharing basis, ii) full cost recovery of the project costs by farmers, and iii) operation and maintenance of their own project facilities.
- g) Current loan conditions applied for the development of smallholder irrigation schemes are extremely high and severe not only for farmers but also for horticulture development in the Areas. Consequently, government should take the necessary arrangements and adjustment of loan conditions to be applicable to farmers and horticultural crop development in the area.

14.2 Aspects of Project Implementation

- a) Training and encouragement of projects implementation agencies such as central and regional government officers at provincial and district levels and NGOs will be essential prerequisites in the following fields, in order to implement the project effectively and smoothly. Training subjects are social preparation and community capability-building, establishment and strengthening of farmers' groups, water and farm management, operation and maintenance of project facilities, etc.

IDB staff members will be deployed and trained in PRA and PDM techniques and later attend the short PRA course at Egerton University or Jomo Kenyatta University of Agriculture and Technology, for coordinating social preparation of the community and capability of relevant agencies such as GOK agencies and NGOs within the Study Area.

- b) During the course of project implementation, NGOs play important functions in terms of loan arrangements, support services to farmers for organization, agricultural extension services, operation and maintenance of facilities, etc. under the jurisdiction of MOALD. One of the NGOs is SISDO. However, more specific NGOs should be involved for the development of smallholder irrigation schemes, considering the schemes' characteristics such as location, main features of the scheme, scale of schemes, farmer's group situation, etc., in order to expect more effective implementation of the schemes.
- c) As the demonstration and pilot farms for promotion of horticultural production in the vicinity of the foothills of Mt. Kenya, the following four Model Areas will be implemented as prioritized schemes in the area.
 - Rupingazi Ngerwe Irrigation Scheme in Embu district (Type-B)
 - Ngomamo/Nyangati Water Furrow Project in Kirinyaga district (Type-C)
 - Nkunjumo Water Project in Meru district (Type-D)
 - Ruungu/Karocho Irrigation Project in Tharaka Nithi (Type-E)

The testing and monitoring of data obtained through the implementation and monitoring stages of the demonstration farms should be effectively applied to similar types of other schemes falling under different classes (Type-B to Type-E). In addition, farmers/farmers representatives should be supported to make study visits to relatively successful schemes classified as Type-A such as Ciambaraga Irrigation scheme in Tharaka Nithi and Muguna Water Project in Meru district.

- d) The Project implementation period in the Feasibility Study was planned at seven years from the commencement of project implementation in view of the current economic and financial conditions in the country. In this connection, the implementation plan of the master plan should be formulated more concretely on the basis of the country's future economic and financial conditions as well as on outputs obtained from the implemented Model Areas.
- e) The limited implementing capacity of MOALD and other support agencies will be concentrated in the implementation of the four Model Areas. However, it is recommended that parallel implementation of the remaining 459 schemes be encouraged using any available support capacity of MOALD and other agencies and incorporating approaches specified in this report as well as the existing guidelines on smallholder irrigation.

14.3 Technical Aspects

Agricultural Production

In order to realize the target objectives of crop farming in the Area, the following countermeasures in terms of agricultural intervention should be taken.

- a) A wide variety of training programs in new technologies and approaches to irrigated horticulture,
- b) Listening to, and working closely with, the Model Area farmers in order to empower them,
- c) Development and testing of new irrigation methods suitable for smallholder irrigation,
- d) Measuring and monitoring water use by farmers in the Model Areas,
- e) Field training of farmers in the use of improved/constructed irrigation facilities,
- f) Support to, and training of, irrigated horticultural extension agents in both MOALD and selected NGOs,
- g) Application of obtained results of field trials and demonstrations of new varieties and techniques at established Model Areas,
- h) Encouragement of gender-friendly crops such as sweet potatoes, kale and introduction of training programs aimed specifically at women,
- i) Monitoring of farm-gate prices and production surpluses in the Model Areas,
- j) MOALD should assist farmers in designing and implementing farm plans and farm layouts that will feature rotational fields as well as soil and water conservation measures.

Irrigation Water Resources and Water Permit

- a) MLRRWD shall undertake a study on actual irrigation water abstraction in the river basin with the cooperation of MOALD with a view to grasping the present situation of available water resources in the basin.
- b) MLRRWD shall establish a water resources development plan on the basis of sub-drainage area based on the above study.
- c) MLRRWD shall undertake a review of the present Water Act as part of countermeasures to attain reasonable water abstraction and utilization.
- d) WUAs with no water permit at present shall take actions for water applications to MLRRWD to obtain the permit.

Irrigation and Drainage.

- a) MOALD shall undertake a detailed review of District Profiles for smallholder irrigation schemes (including individual smallholder schemes) located in the Study Area and formulate a promotion plan of such schemes on a priority basis.
- b) MOALD shall train and strengthen WUAs of smallholder irrigation schemes through periodical training of WUA leaders in order to improve O&M works for irrigation facilities and water management and to obtain water permit.
- c) MOALD shall undertake training programs for frontline extension workers to upgrade their techniques and knowledge on irrigated agriculture and water management.
- d) Members of WUAs shall have mature discussion on the methodology of water management and O&M work for irrigation facilities and determine the basic plan for the rehabilitation scheme before the commencement of actual implementation.

Marketing

- a) In close collaboration with other stakeholders, Marketing Information Branch (MIB) of MOALD should collect comprehensive marketing information of trading volumes, trend, and destination of produce and up to date prices. Dissemination of this information should be carried out through detailed descriptions in newspapers, longer broadcasting time on radio programs and extension services through marketing offices in DAOs. MB should exchange export produce information in close coordination with HCDA and other relevant stakeholders.
- b) Provision of cold storage facilities is essential for maintaining the quality of horticultural produce and emphasis should therefore be placed on prompt implementation of the on-going HCDA cold storage programme within the Study Area.
- c) Improvement of existing marketing facilities should be implemented to meet the requirements of maintaining crop quality and shelf life, equal allocation for retailers and hawkers, collection of marketing information and provision of services.
- d) Promotion of small-scale market groups should be undertaken by relevant stakeholders.
- e) Necessary countermeasures for seed improvement are needed to increase expected of yields and durability against drought and diseases.
- f) In collaboration with local authorities, MOALD should explore the possibility of installing roadside marketing facilities near production centers in order to enhance domestic marketing outlets for horticultural produce.
- g) Contract farming should be extensively promoted as part of a marketing strategy for horticultural

strategy and mechanisms for contract enforcement should be put in place by the relevant stakeholders (farmers, MOALD, HCDA, FPEAK, private sector).

Environment

- a) From the viewpoint of rural environment, the project plan should include soil conservation and water resource management, which will have an influence on the agricultural plan as well as public health and water-borne diseases.
- b) Soil conservation plan should include technical support from MOALD to farmers for planting of trees, crop rotation, in-put of manure, promotion of improved cooking stoves, etc. On the other hand, watershed management plan should include the management of Mt. Kenya Forest Reserve by the Forest Department. Public health should include extension services by MOALD on the use of agro-chemicals, sanitary education etc. Anti-malaria plan should include the study of anti-malaria plants and promotion of their growing by MOALD.
- c) At areas adjacent to forest areas, it is important to pay due consideration that the irrigated crop farming during the dry season has the possibility to be damaged by elephants judging by severe living conditions in the forest during the dry season. Therefore, necessary countermeasures should be provided.

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