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SUMMARY OF WORK PERFORMED AND RECOMMENDATIONS PERTAINING TO NORTHEASTERN
PROVINCE PORTION OF USAID/KENYA NATIONAL RANGE AND RANCH DEVELOPMENT PROJECT.

Consultancy Report

by

Frederick H. Mass
Range Management Specialist
Falls Church, Virginia

AID/af-C-1062

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A.I.D.
Reference Center
Room 1656 NS

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SUMMARY OF WORK PERFORMED AND RECOMMENDATIONS PERTAINING TO NORTHEASTERN PROVINCE PORTION OF USAID/KENYA NATIONAL RANGE AND RANCH DEVELOPMENT PROJECT

(for compliance with contract AID/afr-C-1062, schedule Article 1c. - Trip to Kenya, April 2-19, 1974) The following service was provided in accordance with contract schedule 1 A and B.

Report - by Fred H. Mass

Introduction

Meetings and People Contacted

The Office of Development Services, Bureau of Africa, AID/W, and personnel of the USAID Mission of Kenya and the Regional Economic Development Services Office/East Africa requested professional advice with respect to the preparation of a loan proposal for the Northeastern Province development component of the Phase II Kenya Livestock Development Program as well as an evaluation of the ongoing technical assistance program being financed by AID.

This service was provided in meetings and Task Force Group Sessions as well as in discussions in Nairobi, Kenya on April 4-11 and 16-18 and during an inspection of the Pilot Project in Northeastern Province, Kenya, April 12-15, 1974. The project was discussed in Nairobi, Kenya, with Messrs. Edward Hogan, John Gunning, Harold Jones, Frank Abercrombie, Robert Bell, Bruce O'Dell, David Shaer, David Gephart, Roy Hoffarth, Robert Kornegay, Joe Fraser, Leonard Hendzel, Billy Hardman, Lawrence Witucki, Fred Mass, and Sam Koros (Deputy Director of Division of Range Management of Kenya Ministry of Agriculture).

Mr. Hoffarth and Mr. Arthur Chege, Chairman of the Project Coordinating Committee, were called out of town after April 5th for a prescheduled seminar training.

Nature of Subject Matter

A number of sections of the Phase II proposal were discussed and key items resolved at the Nairobi meeting.

Discussion included but was not limited to the following:

1. The problems concerning estimated number and size of planned water developments and acres included in the project were resolved when it became apparent from earlier planning that the most likely sites had been plotted for large and medium reservoir construction adjacent to perennial range forage suitable for dry season grazing. The need for more small pans was determined when it was noted that small temporary pans could adequately serve the substantially deteriorated acreage supporting mostly annual forage species suitable only for grazing in wet (green) season. Additional small pans were also needed where suitable drainage for large or medium reservoirs was lacking. The increased acreage problem was resolved through recognition that Phase II called for developing Management Block 12 and increasing the size of Block 15, as well as including certain blocks not finished under Phase I.

2. Analysis of increased costs shown for water development construction estimates were presented by Mr. Gephart. This analysis appeared to be reasonably sound. Some reasons for increased water development costs include:

- a. Drainage systems on several undeveloped Blocks are not as well defined as those on most of the Pilot Project where original cost estimates were made. The additional drainage development required at

reservoir construction sites on Block 4 indicates that these increased costs will be common on Blocks north and east of the Pilot Project.

b. Materials excavated on reservoir sites in Block 4 had less clay below 18-20 foot depths. Further excavation and packing of pervious layers with clay caused increased construction costs. Similar conditions are likely to be found in the several Blocks adjoining Block 4.

c. Greater quantities of rock have been encountered in Block 4 and 5 than on the Pilot Project and it is now expected that more rock will be encountered in Blocks 7, 9, 10 and 11. This will increase average costs.

d. Reservoir construction units have not maintained the production pace accomplished on the Pilot Project in the first year (1971) of "dixie unit" operation. Lack of preventative maintenance to equipment units now in use has resulted in considerable heavy repair work on five heavy machines out of seven and indications are that substantial "down time" will be experienced in the near future. Although additional "mechanic aids" are planned in Phase II, the overall production from present equipment is not expected to match earlier performance on the Pilot Project.

e. Fuel, support equipment, materials and personnel costs have all increased substantially. Relatively low salary costs in Kenya are largely offset by the quality of maintenance and labor and the isolated location of the Project. At first glance it appears that costs have increased out of proportion to changing circumstances but more thorough analysis tends to substantiate the cost figures.

Summary Conditions Found on the Pilot Project are as follows:

1. The range resource in all pastures where the Range Management Plan is being complied with are satisfactory. Based on the sample areas visited, this applies to pastures 1, 3, 4, 5, 6 and 7 of the East Mado Gashi Block and original pastures 1, 2, 3, 5, 6, 7, 8, and 9 of the West Mado Gashi Block.

The range resources in pastures where the Range Management Plan is not being adhered to are being damaged as is the case of pasture 4 in the West Mado Gashi Block.

Some detail is provided here to illustrate the importance of implementing a high quality Range Management Plan as originally approved. In pasture 4 above, several hundred head of cattle have been unnecessarily permitted to graze at reservoir 4-2 following the beginning of the current 1974 season. This grazing is the 4th consecutive growing season of use and is in excess of the capacity of the range to maintain forage plant vigor. The range will obviously deteriorate under such repeated use. The cause of this unnecessary and damaging grazing must be charged to the lack of sensitive monitoring of range conditions by the Block Manager and his failure to maintain full communication with the Range Committee and to brief them on livestock moves to be followed during the current wet-dry season cycle. This pasture will need to be completely rested from livestock use until January 1975 to permit at least minimum restoration of the "sorespot" created within 1 1/2 miles of reservoir 4-2.

Chapter I

Review of the Pilot Project

Floods, damaged roads and airstrips delaying travel to Northeastern Province from April 9th until April 12th. Mr. Koros (acting Director of Division of Range Management) in response to my call and invitation, planned to have Mr. Miluki (Provincial Range Officer Northeastern Province) and Mr. Abdirehaman A. Hassan (District Range Officer of Garissa District) accompany our party to the Pilot Project in Northeastern Province).

Unexpected floods kept them from doing so.

Mr. Kornegay, Mr. Fraser and Hassan Rehaman (interpreter of Somali and Swahili) and drivers, accompanied me by project-funded land rover and jeep to the Pilot Project. Mud hazards on airstrips prevented use of aircraft; and floods on the Maso Ngyro flood plain prevented travel to the Kalalut Block of the Pilot Project.

Chief Mahamud Nureyi of the Aulahan Somali clan, also leader of the livestock owners and "Range Committee" who graze livestock on the Mado Gashi Blocks of the Pilot Project, was interviewed. Subchief Schele Osman, who heads up the Mado Gashi Range Committee, Block Manager Daniel Too, Range Assistants Hassan Hussein and Abdi Ismail accompanied our party to the Mado Gashi Blocks of the Pilot Project April 13th and 14th. Mr. Ibrahim Ali, Administrative Assistant to the District Officer for Mado Gashi and Mbalumballa, replaced Mr. Daniel Too on the 14th. Sample areas of pastures 1, 2, 4, 5, 6, and 7 and reservoirs 2-2, 2-3, 1-1 and 5-6 in the East Mado

Gashi Block and all pastures and reservoirs 3-1, 3-2 and 4-2 in the West Mado Gashi Block were visited.

As a common practice forage plants on a semi-arid range environment should not be used more than two consecutive growing seasons and only in emergencies a third consecutive growing season. The pasture at reservoir 4-2 (above) had been used for three consecutive growing seasons prior to 1974 because of the serious recent drought and should have been carefully monitored for available rest requirements under the stress condition following the drought. Since every reservoir visited had trapped water this "wet" season (1974) and all other reservoirs in both Blocks were reported by the Range Assistants to have stored water, there was no reason to use reservoir 4-2 the 4th consecutive growing season. Adequate management training and communication between the Range Management Division and the Mado Gashi Range Committee would have easily prevented this mismanagement.

More than 1600 head of cattle being trailed out of Northeastern Province by the Livestock Marketing Division (LMD) of the Ministry of Agriculture were permitted to graze the forage at the borehole in pasture 2 of the East Mado Gashi Block from June thru November, 1973.

This borehole and grazing site could not be visited during the current trip because of flood conditions. The range ecosystem adjacent to the borehole was reported to have been used heavily by the (LMD) cattle and signs of heavy grazing extends out for some distance from the borehole.

In developing range management schemes with the leaders of the indigenous herdsmen and their "Range Committee," it is assured that pastures scheduled for rest are normally not to be used by other parties. Situations like this however are likely to occur in the developing stages of the overall project.

If the range development scheme in the Phase I and II projects is expected to accommodate travel requirements of LMD livestock when their planned facilities breakdown or are wanting, then it will be necessary for the PASA planning team to assist in planning and implementing quality range management needs on the LMD holding areas. Until quality range management schemes are planned, developed and implemented on the LMD holding and trailing areas the obvious range deterioration on these areas tends to weaken credibility for quality range management in Northeastern Province performance standards. In summary, continuing incidents of emergency use of rested pastures by LMD livestock can tend to breakdown the integrity and effectiveness of Range Committee control of livestock movements and numbers as well as custodial cooperation to protect rest pastures from use by outside livestock. This is cited here as an example of continuing need of full team participation in the Project Coordinating Committee so that related field operations effectively create minimum impact with maximum benefits on the range.

The impact of increased grazing on the Pilot Project's semi-arid range ecosystems show that environmental quality and production can be maintained where the prescribed long-term managed range rest grazing plans are carried out.

There will be a continuing responsibility to meet these quality management requirements. It will require the highest capability of the Range Management Division of the Kenya Ministry of Agriculture working closely with the PASA team to carry out the Grazing Management Plans set forth in the Range Development Project.

Livestock production on the Pilot Project was apparently the greatest on record in 1971 and 1972 while the 1973 drought failed to store water for the dry season except in reservoir 4-2 on the West Mado Gashi Block and at boreholes developed on the project in the East Mado Gashi Block. Although conditions were severe on the Pilot Project, its development apparently provided the only available livestock water adjacent to even dry forage for a very long period.

Chapter II

Recommendations and Supplementary Supporting Material

It is recommended that the proposed Phase II project be approved provided the following mutual understandings and procedures are acceptable to the Kenya Ministry of Agriculture:

1. That stability of the investment for range development in North-eastern Province is dependent primarily on the stability and enhancement of the range ecosystems. The project must therefore continue to be oriented to semi-arid range environmental quality management with stabilized livestock production.
2. That stability of these range ecosystems with increased grazing use is dependent on carrying out long-term, managed rest grazing schedules as a key ingredient in the Range Management Plans tailored to the semi-arid range environment.
3. That maintaining long term stability of this range environment with optimum and stable livestock production consistent with other uses is a key responsibility of the range management function of the Kenya Ministry of Agriculture.
4. That a high level of team interaction performance be maintained in Nairobi, Northeastern, Rift and Coastal Provinces to properly carry out the project. This team interaction, to be adequately effective, must start with full utilization of available team expertise at the Project Coordinating Committee level. The PASA range management, agricultural engineering and hydrologist inputs need to be fully utilized at the Committee level, i.e., the PASA Range Planners, Agricultural Engineers and the Hydrologist need

to participate in meetings of and fully contribute to this Committee.

5. That a seminar-level training program coordinated with all related levels of the Ministry's education program be implemented for personnel of rangeland related divisions by the PASA range management teams and the Division of Range Management. This is necessary and timely to increase understanding of the substance and urgency for and commitment to environmental quality management by all management levels to stabilize livestock production on semi-arid Kenya ranges.

With respect to the point of quality range management on semi-arid range ecosystems in a most meaningful sense, there is a significant difference between certain Range Administration jobs and a Range Management job. The Range Manager must appreciate the difference in order to fully meet his responsibility to the range resource and long-term stability of livestock production on it. It must be clearly understood that a Range Administration job under many situations can be only short-term livestock production oriented. Such an administration job can keep a range officer busy coordinating such activities as livestock marketing, veterinary services, livestock upgrading, numbers, ages, grazing fees, permits, reports, records, etc., while the range resource, which is the base for the whole operation, continues to deteriorate.

It is very important to the stability of the investment that key range management inspectors and evaluators for the Ministry be keenly aware that quality range management is the long-term professional and orderly application of the science and art of applied range ecology to stabilize

livestock production while enhancing range environmental quality.

The planning and construction of the Pilot Project in range development in Northeastern Province has been completed. Implementation of this plan that has a grazing capacity in normal weather of over 40,000 head of cattle, plus camels goats, sheep, donkeys, and wildlife, has been phased-in while construction was being completed. All of the 45 temporary water storage reservoirs and 17 permanent water storage reservoirs developed on the project have trapped water during the March-April '74 wet season according to the Range Assistants. The nine boreholes developed can be made operable as needed.

This Pilot Project presents one of the largest projects equipped to carry out stable livestock production on semi-arid lands bordering the Sahara in Africa. A substantial acreage approximating over one and a half million gross acres of semi-arid range environment has been developed on this project for environmental quality management with stabilized livestock grazing. This Pilot Project provides all of the components necessary for quality range management except one key ingredient. This is the absence of fully qualified and trained Block Managers to carry out the range management plans as intended. While the PASA team has trained a number of qualified Kenyans for Block Manager responsibilities and such skilled managers are available in Northeastern Province, these men have been assigned to administrative and education posts instead of as block manager positions. They are needed in the Block Manager capacity where day to day observations and quality range management decisions must be made and carried out through the Range Committees on the Pilot Project. Quality range management depends on the caliber of

specially qualified and trained men assigned as Block Managers working in the field with fully committed support from the Ministry.

A range management project of the quality, magnitude and significance required for the future stable use of semi-arid range in Africa, calls for the assignment of the most highly qualified and motivated Kenya range managers, specially trained by the PASA Range Planners through the Division of Range Management to capably carry out the Pilot Project Range Management Plan.

6. That range environmental quality management of semi-arid lands with livestock grazing be given a top priority in the Phase I and II projects.

To effect this priority, it is important to establish sufficiently high qualifications, special training and motivation requirements, salaries and benefits for project Block Manager positions to get the most qualified Kenyans into those key range management posts. It will be equally important in maintaining this priority that these field posts operate efficiently by being provided meaningful job descriptions, operable transportation with reasonable maintenance facilities, support staff with good equipment and facilities and timely follow-up training and inspections. The Ministry must be positive that the approved Range Management Plans are capably carried out by the Block Managers.

7. That the most qualified range officers who have been specially trained and experienced by the Range Planner through the Division of Range Management for quality management of the range resource in a specific environment (the Pilot Project in Northeastern Province, for example) be assigned the key responsibility to fulfill the Management Plan requirements there. Transfer of Block Managers could then be effected when qualified

replacements have been trained by the Range Planner and jointly approved by the District or Provincial Range Officer and the Range Planner.

One of the key qualifications for an effective Block Manager is the range officer's ability to adequately communicate in the language and culture of the indigenous people who comprise the Range Committee. There are candidates available with this qualification who have been specially trained as Block Managers by the Range Planners through the Division of Range Management but who presently have other assignments.

8. That all sections of approved Range Management Plans including procedures for developing full interaction with the "Grazing Committees" of the indigenous livestock owners be carried out by the Ministry to the original quality level of communication outlined in the approved plan.

Positive procedures to prevent, minimize and eliminate practices that can lead to damaging grazing impacts to long-term stable management of the semi-arid range environment must be given top priority to carry out a Range Management Plan.

Modification of a Range Management Plan for a Block based on valid reasons which will not damage the range resource, may be made through joint approval of the District or Provincial Range Officer and the PASA Range Planner.

The underlying ultimate responsibility for stable production of the range resource and livestock must rest with the range management function.

9. That more effective correlation of available services and effort, especially in the far removed provinces, would be much simplified if PASA

members of the team were able to operate under the Division of Range Management alone rather than to have members fragmented to the Division of Water Development.

If this reorganization can not be accomplished, then a second level of formal team task force interaction must be provided to prepare clear, jointly approved current action plans with appropriate officers of the Ministry of Kenya. This group meeting must serve as a regularly scheduled forum for prepared presentation by team participants, stating accomplishments, goals and staff support as well as equipment needs including operable vehicles and efficient maintenance requirements. Representation must be present from the appropriate Divisions and levels, including the PASA team, Mission management, and the Range Management and Water Development Divisions and others that may be added for special matters. This representation can and will make necessary decisions for solution of common problems as presented. Examples of topics are range planning and implementation policy and schedules as related to the Water Development Division responsibilities; compliance with the "Pro/Ag" agreement on availability of equipment; maintenance plus support staff and equipment required to meet schedules.

The team relationship to "AID" Mission, Government of Kenya (GOK), Water Development Division (WDD), and Range Management Division (RMD) requires considerable current organizational clarification to meet the situations encountered. The PASA team must know who is the responsible officer under a given set of circumstances and who is accountable for the several facets of the Project program. It is essential that this team not be

fragmented. For instance the agricultural engineer is primarily needed to perform and work with the team as a full team member with latitude to operate within the scope of the original format for the team members in a manner similar to the way the Range Planner operates in the range development team.

10. That developing and maintaining water facilities determined to be necessary by the PASA range planning team is a required service function to quality range management responsibility. The range management function is, however, the key responsibility for planning, implementing, and maintaining stabilized use of the range resource. The PASA team must maintain latitude for decision to meet these responsibilities in planning and implementing the Range Management Plan for each Management Block.

The support staff and equipment for test drilling and track construction must be available to assist the Agricultural Engineer in close response to the current needs for this service by the team Range Planner working through and with the Division of Range Management.

11. That one additional PASA Range Planner (Implementor-Trainer) and one additional Agricultural Engineer be provided to the Northeastern Province team to assist in accomplishing the additional workload of combined Phase I and II.

The span of control in time, distance, numbers and complexity of the final range planning, implementing, training and agricultural engineering reconnaissance, surveys, design and construction supervision is increased

substantially by the accumulated workload and planned accelerated program.

Four additional men (positions) are proposed to meet the construction supervision, supply and mechanic needs of the Northeastern Province Reservoir construction (water development) work force. These positions are necessary to provide reasonable, efficient use of the construction and maintenance equipment to complete the job within the proposed funding and time. It is likewise essential to provide adequate professional range management and agricultural engineering personnel services to accomplish the accumulated workload which now exists and as planned in Phase II.

As the workload expands, the Range Planner, in addition to designing final range plans at an accelerated rate, must be available to meet training needs at all levels and to insure stable operation of the Pilot Project as well as operation of the additional blocks as they are developed and implemented. A deputy Range Planner position is now needed to help carry out this necessary work of establishing long-term quality grazing management practices through the tenure of the Phase II project and advise considerably beyond that.

The Agricultural Engineering load is being approximately doubled by the need for additional test drilling, reservoir surveys and designs, advisory assistance for surveys and construction, maintenance supervision on the constructed improvements, and for the planned additional construction unit. A highly capable counterpart will also need to be provided with each reservoir construction unit in addition to the four positions being added to the construction units above. This is essential in order that final reservoir surveys, designs and construction supervision will be provided with minimum advisory time by the Agricultural Engineer. This will free the Agricultural

Engineer to a considerable extent to permit him to proceed with current test drilling, preliminary reservoir surveys and track construction needs for and with the Range Planner to properly accomplish the range development plan.

12. That current quality maintenance of water developments and management tracks be provided on developed grazing blocks (such as the Pilot Project, for example). The schedules for this maintenance on developed blocks should be prepared and implemented through joint action of the Range Management and Range Water Development Divisions and the Range Planner and Agricultural Engineer.

It is recommended that local hand labor units in Northeastern Province be organized and hired to accomplish maintenance work on reservoirs and management tracks on the range development project where there is capable supervision, transportation and facilities. This method of supplementing heavy equipment unit maintenance can supply a source of needed employment as well as involve local people in repairing the improvements and gaining understanding of the nature and scope of the Range Management Plans for the several blocks. Range assistants on the Pilot Project indicated that a number of local people would be interested in working in this kind of labor unit.

13. That the Quarterly Reports from the three range management teams and the Agricultural Economic Group as called for in the PIO/T be regularly prepared and distributed. These should serve as the project control record of objectives, accomplishments, contacts, constraints,

action plans and recommendations for solution of the currently identified problems.

Correlation of certain aspects of the overall team report can provide perspective and proper emphasis and eliminate duplication. Such correlation should be one of the responsibilities of the team interaction job discussed above. Record of highlights of team and task force meetings can also serve as useful project control tools.

End of Tour Reports as called for in the PIO/T can and should provide valuable reference for teams which follow.

14. That the function and interdependence of one Management Block or ranch to another be evaluated and utilized in an overall plan of options and procedures for adjusting livestock use and livestock marketing during unusual drought conditions. The objective of this overall plan is to present procedures for temporary adjustment of Range Management Plans between Blocks in a Province and/or zone, to take optimum advantage of available water, forage and marketing while limiting grazing impacts to the capacity of the range resource during such "emergency" periods.

15. That vehicles plus test drill, track construction and support staff equipment and material be made available promptly as needed to all range planning and implementing teams.

Delay in obtaining the agricultural engineer for coastal province is also delaying progress on the related items on that project.

16. That delay to PASA team members obtaining permits from the appropriate authorities for a firearm for personal safety while working on dangerous wild animal habitats be promptly solved. This safety requirement must be met by forest service employees assigned to grizzly bear habitats in Alaska. Provisions for meeting this same safety requirement should likewise be met by Kenya where forest service PASA employees are required to work in lion, elephant, leopard, rhino and cape buffalo habitats as well as in isolated areas subject to contact with armed poachers, cattle thieves, snakes, etc. In summary either a medium to large calibre gun permit should be provided these men or armed askaris provided when they are on safari. This is a serious safety requirement that should be met promptly by the Kenya Mission and Kenya Ministry.

17. That a Range-Wildlife Planner PASA position be assigned to work with the three Range Planning Teams.

In Phase I, it was realized that almost every Block of range environment being analyzed in range development planning is also key wildlife environment. In order to produce adequately sophisticated range management schemes for stabilizing quality wildlife environment while enhancing the livestock habitat it is timely that this expertise be added to the team. All of the PASA range planners have training and experience in developing livestock ranges in wildlife habitats. The Range-Wildlife Planner should have training and experience in developing managed range rest grazing schemes on wildlife habitats similar to the range planners but also either with degree or outstanding accomplishments in range and wildlife habitat developments, i.e.,

he should have applicable range planning training and experience while having sufficient portfolio in wildlife management to represent that field in contacts with the Division of Tourism and Wildlife.

18. That opportunities be fully utilized by the Range Planning Teams and the Division of Range Management to work cooperatively on their common program and with other related Divisions in the Ministry. The recently assigned offices in the new Agriculture Building in Nairobi, will provide highly improved facilities for closer working relationships thus developing better understandings resulting in joint actions to meet quality range management requirements on the Range Development projects in Kenya.

SUMMARY

1. Projects have made much progress in all respects.
 2. There is still some tendency to lag from efficient and from environmental quality practices required for stable range development investments in semi-arid range environment.
 3. Pending approval of a Phase II project, it is necessary and timely to review the above recommendations with the Ministry in depth in order to:
 - a. resolve current project objectives;
 - b. identify constraints which can impede progress to project objectives; and,
 - c. concur on procedures necessary to accomplish the project objectives.
-



Fred Mass
Range Consultant
April 27, 1974