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J.B. Wyckoff

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PLANNING ARID LAND DEVELOPMENT PROJECTS

by J.B. Wyckoff¹

ASAL in Perspective²

"The territory of half the nations in world is located partly or wholly within the arid and semi-arid zones. These lands ... account for a third of the earth's surface ...". The exploitation of these extensive resources has traditionally been in the form of nomadic pastoralism. Increasing population pressure and the desire of international donors to "help", has led to the commitment, and in some cases the expenditure, of vast sums of money with disappointing results as ascertained by the donor evaluations. Behnke quotes from Yves Wissoc's 1978 paper, "... after the international expenditure of some U.S. \$650 million in fifteen years... some...conclude that African livestock development is a failure". This agrees with Goldschmidt's pessimistic view, "The picture that emerges is one of almost unrelieved failure. Nothing seems to work, few pastoral people's lives have improved, there is no evidence of increased production of meat and milk, the land continues to deteriorate, and millions of dollars have been spent. What is wrong?" This paper examines one basic factor which has been observed to be contributory to this failure of ASAL projects in Africa to meet their objectives, i.e., the structure of ASAL project planning, with limited reference to Kenya.

Caveats for ASAL Project Planning

A UNESCO Technical note⁶ specifies some extremes to be avoided in project planning for arid and semi-arid lands, i.e.,

" - passé romanticism which calls for a return to traditional ways of using arid and semi-arid zones ..."

" ~ a scientific and futuristic point of view which,... pretends that all problems can be solved by science and technology and concentrates on fundamental research rather than on the introduction of practical techniques likely to help satisfy the immediate needs of the local population or to improve their situation..."

It cautions that "A distinction must also be made between what is hoped for and what is in fact possible".

These caveats are applicable with respect to both the human and natural resources involved in a project scenario. In this context the UNESCO paper continues, "while it is technically possible to increase agricultural production in semi-arid zones, it would be illusory to suppose that increasingly high population densities can be maintained". Simultaneously, "Rational use of range land also implies a change in management". For..."Although important results have been achieved in prospecting for and extracting water ... and an increase has been brought about through advances in veterinary medicine, little progress has been made in improving range lands". Implicit in this statement is the assumption that range lands, in

general, are not at a climax state and can, in fact, be improved, i.e., can produce more harvestable forage on a sustainable basis than is being produced at present. Actually, this may not be the case and increasing the amount of forage harvested may depend upon a more appropriate livestock species mix and improved grazing management.

While it is not necessary for planners to be technically competent in all natural science disciplines, they should correctly apply what they know. Historically many of those involved in planning arid and semi-arid rangeland improvement projects have used overstocking and overgrazing as synonymous terms. This has confused decision makers since these terms are not technically synonymous. Understocking and overgrazing can occur separately or simultaneously due to the management practices followed in grazing livestock. Light, continuous grazing of new growth can weaken forage plants and lead to a situation that may appear to be overgrazing. Poor dispersion of livestock within a grazing area may surface as overgrazing in some areas. Using a wrong grazing pattern, a wrong timing of grazing or an inappropriate livestock mix may also cause what appears to be overgrazing when it is really management error. It has been demonstrated that too light a stocking rate can result in soil capping, thus excessive runoff and the failure of natural reseeding. The drying up of old ungrazed growth may smother new growth or protect diseases or rodents which kill forage plants. Thus, range condition, even with understocking or complete rest, can decline.

The key in range forage management is to consider the physiology of the plant, not only the physiology of the animal. While range management may be an art as presently practiced, there exists a well established scientific ecological base. Thus apparent overgrazing may merely be a symptom of poor livestock, pasture or grazing management within an institutional framework that does not encourage or permit proper management. The need to define the problem within the correct context before designing an ASAL project or program is absolutely essential.

Jarvis, 1984, states that, "In the most simple sense overgrazing implies that the stocking rate...is too high, leading to a decline in livestock production ... and/or to a deterioration in range conditions (vegetation composition and cover, as well as soil conditions)...". He continues, "Range degradation ... may occur whether or not overgrazing is being practiced ... a source of continual confusion... Grazing pressure is only one factor causing changes in range condition; other factors include climate, fire and other sorts of human activity".

He defines overgrazing as "...whenever the present value of livestock production -- considering both current and future output (properly discontinued) -- is below its potential..." This can be caused by decreasing "primary production", i.e., range forage or a failure to maximize "secondary output", i.e., the production of animal product. Thus the key to "overgrazing" is not only the absolute numbers of livestock grazing a given area but in combination with the stress condition of the forage plants, the time period grazing is permitted and the recovery period prior to further grazing. Thus unequivocally relating overgrazing with overstocking is highly presumptuous.

Yet planners' universally proposed solution to range problems has been destocking. Jarvis (1984) indicates that European observers suggested "...external stocking controls..." as early as the 1920s. An IBRD report on their Mission to Kenya July 30, 1962 indicated, "Much ...grazing land has been overstocked ..." "The time would appear to be opportune for the introduction of legislation for controlled grazing ..." UNESCO (1977) in their proposals for semi-arid zones advocated "...limiting

livestock numbers ...where the main problems of overgrazing occur ...". Blench (1965) recommends that "...priority should be assigned to encouraging herd-owners to destock ...". Yet virtually every livestock range in Sub-Saharan Africa is periodically destocked by drought but the apparent "overgrazing problem remains". In this context, it is not surprising that destocking remains politically, culturally and economically unpalatable simply because it does not solve the problem even though it lowers producers' incomes.

If grazing management is the controlling factor, the problems associated with rangelands being a common property resource and/or communally grazed become acute. Most Sub-Saharan African governments do not have the means or the will to control animal numbers or grazing systems under the prevailing "ownership" patterns. Where governments have attempted to control the use of range lands, the results have not been encouraging (Sanford, 1983).

The Changing ASAL Environment

Management systems proposed in many range projects have failed to recognise the changes that have occurred in the conditions under which successful traditional grazing systems had evolved. Livestock movement has been restricted by fencing (Botswana), the establishment of grazing blocks, group ranches, and wildlife parks and reserves (Kenya), expanding arable populations (Niger) among other causes. Access to high potential grazing land was restricted early in the century for colonialization (Kenya) and continues today as ranches are subdivided for smallholder cropping. Access to traditional water sources becomes more and more limited as water is allocated to urban uses.

The type and mix of animals in traditional livestock operations in many range areas also have changed. The improved cattle that have been introduced such as Boran, Sahiwal, Brahman and Simmentar and the resultant offspring from crossing these breeds with native cattle, are much larger, thus individually require more forage, are less disease resistant and require a higher level of management (e.g., dipping, vaccination and better nutrition) in order to survive. There is also a trend toward increasing the number of small stock, sometimes at the expense of beef cattle, because they better serve the pastoralists' changing needs. This is especially evident in Kenya's Maasailand where small stock numbers have increased relative to cattle numbers on all but three of the established group ranches. The different grazing and browsing habits of the different animal species have resulted in differential impacts on the range resources and the intensity of disease as compared to past traditional systems. For example, rinderpest, east coast fever and contagious bovine pleuropneumonia, three serious diseases affecting cattle are not a problem to sheep and goats.

It is also apparent that the number of people now dependent upon a decreasing quantity and quality of the range resource base has increased and continues to increase at unprecedented rates. The change in the rural population, net of urban population, in Kenya's "low potential" ASAL Districts as defined by the Central Bureau of Statistics, showed the following annual growth rates from 1969-79; Tana River 6.1, Marsabit 6.3, Garissa 7.3, Wajir 4.9, Kajiado 5.7, and West Pokot 6.8, (Statistical Abstracts 1969 and 1979). The rapidly growing population, the government policy of establishing group ranches, and the current move to sub-divide these group ranches into individual plots is forcing previously nomadic livestock production to become sedentary. These changes require different production technologies and grazing

management systems to accommodate the consequences of the periodically occurring droughts. As individual plots become too small to support a family's subsistence requirements from livestock grazing, limited cropping is introduced that is largely ecologically unsustainable. Blench (1985) indicates that this is "...the common solution in West Africa ..." but is not always practical as, for example, "The pastoral zone of Niger is outside the arable region and the density of agricultural settlement makes this type of re-location extremely difficult".

Simultaneously, the pastoralists themselves are experiencing changes in value systems and preferences. They are undoubtedly affected by the absolute growth in their population, the changing age, sex distribution, the educational level of their population and their exposure to urbanization. Recent ILCA studies of Kenya's Maasai group ranches indicate that up to 38 percent of the children attend school (varies by income stratum), 35 percent of their food expenditure is for maize, 24 percent for sugar, and that 16 percent is spent for hotel food and beverage. Further, over 20 percent of the families' cash flow comes from employment/trade (9%), remittances (6%) and loan collections (5%). Expenditure elasticities, i.e., the percentage change in the expenditure for a given commodity purchased divided by the percentage change in total expenditure, were calculated to be 0.61 and 0.59 for maize and sugar respectively, 1.82 for hotel food, and 1.11 for all non-food goods. These consumption elasticities are interesting when compared to expenditure for livestock inputs at 1.77 (ILCA, 1983). Livestock production inputs that should increase output, thus increasing income and permitting the more expenditure, have a high expenditure elasticity. The coefficients indicate that if total expenditure was to decline 10 percent expenditure for production inputs would decline 17.7 percent. Sugar consumption, on the other hand would decline less than 6 percent. With a drop in expenditure, the purchase of production inputs would decline about as rapidly (1.77) as purchases of hotel food (1.82).

Thus, as expected, access to markets changes expectations of attainable standards of living and other values, and affects the types of technology many pastoralists are willing to accept. Changing peoples' perception of needs is usually an intergenerational function and does not fit neatly into a three to five year project system. ASAL project planners must recognise the process by which expected beneficiaries' value systems change, and capitalize upon those characteristics of affected decision makers that will lead to "desired" change.

No project succeeds without those who ultimately must execute the change being motivated to do so. This usually requires a visible improvement in the well being of the individual decision maker or his family. Thus, a technology or management system is needed that is applicable to the resource base and the value systems of the beneficiaries which, when applied, will provide near term benefits within the existing management capability, institutional framework and value system of the beneficiaries. It has been noted that such technology has seldom been available in cases of range development.¹⁰

Satisfying the Actors

It is usually assumed that the major goal of all interested parties in an ASAL program is a "successful" project. What criteria do the different actors use to judge the degree of success attained by a particular project? It is hypothesized that the donors' main objective is to get the money committed within a given country and actually spent. Politicians want to be sure that the donors' money is spent within

their particular constituency. The government administrators of a project want to be sure that the money is spent under their particular control, within their Ministry. Finally, beneficiaries look upon the project as a way to improve their standard of living and to enhance their productivity. Thus, as with any development project, if we start with the beneficiaries' objectives and provide a project which motivates them toward implementation, possess the implementation capacity, operate the project within an effective administrative setup, and succeed in appropriately spending the donors' money, everyone should be satisfied.

The problem is that the traditional project system sees the donors suggesting or insisting upon objectives that are not compatible with those of the proposed beneficiaries. Politicians and administrators acquiesce to these unrealistic project objectives in order to get the donors to commit the funds to their Ministries for expenditure in their districts. However, because of the lack of compatibility of objectives, the program or project fails.

Kenya's livestock II provides an example of the problems of the traditional project system. It "...was prepared as a result of the generally encouraging experience of the pilot first Livestock Project...Livestock II was designed as a broadly-based, integrated program to increase beef production in Kenya ... It was based upon a creditable intention to spread the benefits of development widely among low-income groups ... At the end of its eight-year lifespan, the project largely failed to meet its principal objectives and its rate of return to the Kenyan economy was close to zero" (IBRD August 7, 1984).

Among the "Lessons Learned" quoted from the USAID: PROJECT ASSISTANCE COMPLETION REPORT, June, 1983, were:

- The project design was faulty in that it mistakenly assumed that pastoralists of north-east Kenya were meat producers when in fact they are milk producers. Therefore, the whole livestock production system was quite different from that which the project designers had anticipated.
- The project greatly underestimated the complexity of the problems faced when dealing with pastoralists. It appears the cultural base of the pastoralists was not fully understood during the project design.
- The pastoralists should have been more involved in project design, operation and decision making during implementation.
- Grazing block committees were established but were less effective than planned ...very few of the GoK participants ...spoke the language, and minutes ...were taken in English. All these factors effectively eliminated any meaningful participation by members of the target group ...
- Most of the GoK employees ... not from pastoral backgrounds, have not been range livestock producers, and generally do not speak the local language.
- The pastoralists should have been more involved in the development of the geographic boundaries ...
- There is ample evidence the pastoralists would have accepted more responsibility in the operation and maintenance of boreholes and water catchment pans if the project design had provided for this type of participation.

- Resources provided ...greatly exceeded ...administrative, coordinating and maintenance capacity.
- A major constraint ...was the ineffective livestock marketing system ...
- The project over-emphasized the development and utilization of the range by cattle and ignored the important role that camels, sheep, goats and donkeys have in the pastoral system.
- There were accusations ...that the project was producing a negative effect on the ecological balance ...and was enhancing desertification of the area . . ."

Even with properly conceptualized projects, cumbersome bureaucratic regulations, inefficient personnel and failure by administrators to release funds in a timely manner, often stymies proper project execution. For example, donor funds available to Kenya's livestock project totaled US\$ 21.5 million. By the scheduled end of the five year project only 22 percent had been claimed by and disbursed to the GoK. Even with the granting of a 2 year extension, US\$ 9.1 million had to be cancelled. This type of problem has resulted in some donors insisting upon direct disbursement of funds outside the government disbursement system. This technique has proven to be useful in overcoming this type of bottleneck in Kenya's Machakos Integrated Development Project.

Still, effective execution of an ASAL project, as with any other, occurs only if beneficiaries view the project as "their project". If the beneficiaries view the project as a "government project", they will wait for government implementation without becoming involved in the actual execution of the project. In Kenya this is exemplified by the difference in "harambee" (i.e., self-help) and "government". The former involves active participation on the part of the expected beneficiaries while the latter results in their non-involvement.¹¹

A lot of concern has been expressed and a lot of time spent in the siting of particular ASAL development projects. This becomes a problem because of the political aspects of spending the money through a given Ministry or in a given constituency. However, if a project is to succeed, the site must be determined by the existence of a correctly defined problem (derived from a locally "felt need"), productivity increasing technology, a favourable institutional structure, and the willingness of the beneficiaries to implement a mutually determined set of project objectives.¹² Siting on a political basis without local acceptance, guarantees failure of the project. This does not necessarily mean that a politician cannot effectively solicit local support for a project within his constituency but he must structure his "sales pitch" around a locally determined "felt need".

Lessons From Experience

There are development planners who favour multiministerial, multi-sectoral projects. However, experience demonstrates that, although conceptually superior, in practice they usually end up as a single Ministry project depending upon which Ministry effectively gains administrative control. Kenya's Baringo ASAL program became essentially a Ministry of Agriculture project with almost no support from the old Ministry of Livestock Development or other Ministries such as Health, Education and Water Development even though it was designed as primarily a Livestock project with supporting "basic needs" provision. This occurred because the administration

rested within the Ministry of Agriculture. The Kenya Livestock Development project II failed to accomplish many of its objectives because the Ministry of Livestock Development administered the project but was forced to depend upon the Ministry of Water Development for range water development activities which were never accomplished. The Integrated Agricultural Development Program, a multi-sectoral multi-sited project, was an equally serious administrative disaster (Devreş, 1979; ILCA, 1982, IRRD, 1982 and 1984).

Thus, Kenyan experience indicates that for the administration of a project to be effective, it must be under the control of one entity with the flexibility of contracting for services from other Ministries or the private sector. The responsibility, authority, and the credit for a successful project must be sited in one decision unit, under one administrative officer. This administrative officer must have the authority to co-ordinate all activities within and across Ministries with the flexibility of engaging alternative means when performance failure causes a bottleneck.¹³

ASAL project design must involve a "systems" approach if it is to succeed. Improving range forage without improving livestock quality, reducing livestock mortality, increasing livestock fertility, improving market access, increasing offtake rates and improving access to desired consumer goods, education for children, health services, domestic water, improved housing, etc., will not do the job. If the project results in improved range forage, improved off-take, thus improved income, then schools, health clinics, etc., may be created through harambee rather than through government investment.

Again, in Kenya, building in participation by beneficiaries at an early planning stage of ASAL projects is absolutely necessary. An exception on the part of the beneficiaries (that they are to provide their own social services) is also essential if that is the planned strategy. Experience has shown that if the potential beneficiaries expect the government to totally fund and implement the project, they will fail to participate actively in project execution. Thus the project will fail to meet its objectives. An observed water project on a Maasai group ranch was left uncompleted by the Ministry of Water Development. This project had completed a borehole, installed a pump and could easily have been completed with available ranch labour had the potential beneficiaries felt that they had a part in or some responsibility for the completion of the project. They did not.

ASAL Project Selection and Planning

Because of the failure of past ASAL projects to accomplish their objectives, some planners advocate a "next best effectiveness" or a "second best solution" for ASAL problems in developing countries. However, no Sub-Saharan African country can afford a "next best" system. Resources are too scarce and population demands growing at too fast a rate to tolerate anything other than optimum development. The answer is to build ASAL projects from the "bottom up", properly defining and organizing the projects as previously outlined. All participants will be satisfied if the project accomplishes its objectives.

The chances for effective implementation, thus a successful project, are greatly improved if planning is done from the "bottom up". "Top down" planning virtually never achieves a successful result for all the actors, because donors, politicians and administrators tend to debate ends and means in a "never, never land" devoid of the

reality of the needs, desires and the participation of the beneficiaries who must accept, support and implement the project. While project funding ultimately is received at the "top", Kenya's "District Focus" orientation is shifting fiscal and implementation responsibility to the local level.

It sometimes turns out that the first step towards successful implementation often must be institutional change which some politicians may feel will lead to personal political disaster. However, without such change, it may be that few if any of a project's objectives can be accomplished.

Proper sequencing of multi-sectoral ASAL projects is essential. It does not make sense to build schools in areas where family incomes are not sufficiently high to provide school fees, for children must provide year-round labour for subsistence production. Building health clinics in areas where the population believes in and depends totally upon "traditional medicine" is likely to be a waste of limited investment capital. Similarly, investing in expensive permanent water systems in areas far removed from population concentrations does not satisfy many "felt needs". While ASAL beneficiaries' needs may be multi-sectoral in nature, starting at the "wrong end" relative to their perceptions will guarantee failure of the project.¹⁴

It is proposed that the proper sequence of events for ASAL planning be the following:

1. A thorough examination and understanding of the traditional system, why it evolved the way that it did and why it worked.
2. Identification of the changes that make "development" necessary. This will mean an assessment of the change in the relevant population, including age and sex distribution, changes in their value system, changes in goals that these people wish to attain, changes in the available resource base, and changes in the institutional framework within which they have traditionally operated.
3. Competent identification and definition of the problems caused by these changes.
4. The development of alternative solutions to the problems and assessment of their impacts and the distribution of their impacts among the affected population.
5. Selection of the mutually most acceptable alternative to beneficiaries, administrators, politicians and donors.
6. Creation of an appropriate management system for implementation.
7. Assessment of implementation capacity, i.e., availability of appropriate technology to accomplish the stated objectives, the technical personnel needed to execute the technology, and a supply of the needed technical inputs.

Having successfully completed the above planning sequence, the project must then be organized properly in terms of the administrative framework, the allocation of responsibility and authority, the capacity for performing activities in a timely

fashion, and the ability to access funds. This latter may often require a direct payment program by the donor.

CONCLUSION

In order for an ASAL project to succeed, it must generate support from the beneficiaries, support from the relevant Ministry or Ministries, support from the relevant politicians, and donor support, in that order. This requires "bottom up" planning where support of the donor, politicians and administrators is a necessary condition but support of the ultimate beneficiaries is sufficient condition for successful project implementation. This contrasts directly with past "top down" ASAL project planning in Kenya and elsewhere in Sub-Saharan Africa which has universally led to failure to accomplish project objectives.

FOOTNOTES

1. Advisor, Strategy Branch, Development Planning Division, Ministry of Agriculture and Livestock Development, Government of Kenya and Project Associate, Harvard Institute for International Development. The views expressed in this paper are those of the author.
2. Jaetzold and Schmidt, 1982, define Arid Lands as areas where annual average precipitation is 25-40% of potential evaporation. Semi Arid Lands have annual average precipitation of less than 25% of potential evaporation.
3. UNESCO, 1977.
4. Behnke, 1983.
5. Goldschmidt, 1981.
6. UNESCO, 1977.
7. Attention is called to a recent paper on the technical aspects of ASAL planning, i.e., Weiss, 1984.
8. See Jarvis, Lovell S., 1984.
9. See West, et al., May 1984.
10. "A principal lesson learned is that the technology promoted in the past often did not overcome or alleviate many of the constraints faced ..." (USAID, Discussion Paper No. 13, 1982). "...programmes designed to transplant 'modern' technology continuously came up against the realization that the technology offered had little or no advantage over the old and traditional methods ..." (Evenson & Kislev, 1975, p. 156). An anonymous reviewer of this paper quite correctly pointed out that if appropriate technology doesn't in fact exist, even the best planned ASAL projects cannot succeed.
11. Delivering the project discussion in the appropriate language is also important

because of the high level of illiteracy among prospective beneficiaries in some areas.

12. An example is reported in a recent IBRD (1985) report concluding that:
 - 1) The results of the project have been unsatisfactory mainly because its intended beneficiaries did not participate in the planning and design, and, as a consequence, the objectives were wrong and misguided.
 - 2) Some of the conditions for participation were unreasonable ...and participation was low".
13. "...the greater the number of donor agencies, the smaller the chance for eventual success. The same may be said of host country units" (Devres, 1979).
14. "When local people decide what goals to seek, how to seek them, and who shall do the work, their probability of success is high" (Devres, 1979).

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