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Cultural Survival Inc.
11 Divinity Ave Cambridge Mass 02138
617-495-2562

THE SOCIAL IMPACT OF DEVELOPMENT ON ETHNIC MINORITIES

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Dr. David Maybury-Lewis, Director
Dr. Thomas Barfield, Assistant Director
Dr. Michael Fischer, Middle East Researcher
Dr. Jason Clay, Brazilian Researcher
Dr. Richard Huntington, African Researcher
Mr. Bruno Pajackowski, African Researcher

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NEW DEVELOPMENT APPROACHES FOR THE 1980s

The Iranian revolution of 1977-79 dramatized observations already widely available in the development literature about the failures of post-World War II economic development strategies. Iran was one of the major test cases for modernization theory: as an oil-rich nation with a substantial population which could absorb increased capital inputs and could provide both a labor force and a reasonably sized domestic market, Iran was seen as the prime candidate for rapid transformation from the third world into the industrialized first world. Here was the case where the constraint of capital was removed, it was thought, and so development should be easy. Instead there was a revolutionary explosion, in which issues not only of structural imbalances in the economy, but also issues of discrimination against minorities, and proletarianization of the poor received emphatic prominence. The case of Iran is an exceedingly interesting one: both its failures and its successes illustrate basic principles of development, of what to do and what not to do. In the 1980s Iran will continue to be one of the major test cases for thinking about the proper mix of development strategies. Assuming the revolution continues to be successful, Iran should become a major case in thinking about self-reliance, stimulating local initiative, adapting development ideas to local social structural patterns, and incorporating social purposes and social costs in the planning process, rather than leaving them as

residual "externalities," "complicating variables," or unevaluatable "soft" features.

Afghanistan, Brazil and the Sudan have also provided key models for post-World War Two modernization theory and development experimentation. They too will continue to provide major test cases for the 1980s. Their successes and failures, if not dramatized as fully through the international media as the Iranian revolution are quite as politically and sociologically striking as the Iranian case. Successes, almost by definition, do not receive dramatic attention: the Qataghan cotton development in northern Afghanistan, to some extent the Gezira scheme in the Sudan, the Qazvin project in Iran and several other examples are cases of either success or at least positive results which point the way to making them more successful. The major disasters are better known: the Helmand Valley Project in Afghanistan, the Khuzistan agrobusiness schemes in Iran, and the Transamazonian Highway in Brazil. Both successful projects and the failures may have positive as well as negative features. The Transamazonian Highway, to outsiders, appears to be a disaster on the scale of the Helmand or Khuzistan: it clearly has tremendously increased the dangers of annihilation for small Amazonian Indian populations, and it has spectacularly failed to relocate the rural poor from other regions of Brazil and establish them as smallholders in the Amazonian regions.

In Brazil political repression and development strategies are closely linked. This is one of many parallels between the Brazilian case and the Iranian one. In Afghanistan as well struggles over strategies of development has led to a bitter civil war, and now

subordination to an imperialist economy (the Soviet Union). In the Sudan, development planning is a delicate political game in the context of recovery from a sixteen year civil war.

The lessons of the 1970s seem clear. Development efforts have been seriously flawed: they have been informed by bad economics, bad political judgment, and bad (if any) sociological imagination. These are hard facts, not romantic musings after a less complicated or conflict filled past: the past was no utopia. Sociological imagination should not be dismissed as "soft," "complicating variables," "externalities," or unevaluatable speculation. To do so is to engage in self-defeating illusions of romantic scientism. It seems likely that the 1980s will see an intensified conflict within the ranks of development theorists over the use of pure economic calculations (those who point with pride to the economic recovery of Chile under General Pinochet, dismissing the political repression and painful economic adjustments as necessary costs) versus the use of intelligent, hard-nosed, sociological creativity (those who refuse to accept in the name of an ever receeding future paradise of affluence and freedom such costs as political repression, proletarianization, and treating vast populations as objectified labor units who need have no say).

This conflict will intensify for reasons of political reaction if nothing else, especially if repression in the style of Iran and Brazil in the 1970s continues to be an essential component of development planning. The challenge, it is clear, is more on the side of those who would champion the use of sociological imagination. We

include ourselves on this side and recognize the need to make criticisms and suggestions concrete. The fault of the sociologists has been vagueness and abstraction. But in part this fault has been forced on sociologists within the planning field by not allowing them the time or resources to develop the specific on-the-ground, in-depth expertise necessary.

We are fully convinced that, quite apart from avoiding major negative results such as project collapse, ecological destruction, or political crisis, development projects can be designed and implemented in such a way as to protect populations from unnecessary negative consequences.

The following essays analyze a number of projects in the four countries of Afghanistan, Brazil, Iran and the Sudan in an effort to provide some positive recommendations for improving their benefits to the lower classes, to small societies on their margins, to minorities within their compass, and to the society at large. We are convinced that systemic social analysis can provide not merely incisive critiques but can play a crucial positive role. The case studies attempt to be more than historical accounts and evaluations: they attempt to highlight structural problems of the particular countries. We very much believe that planning documents are all too often meaningless (however useful in selling or legitimizing a project) because they are abstract. Indeed we fault our own case studies for lacking sufficient on the ground detail. The state of the literature prevents us from doing more, but we hope we have presented enough to make the point that

future planning should involve the kind of detailed on the ground and systemic analysis that anthropologists can provide, and that this on the ground analysis should include -- for instance -- comparisons of why some villages within the project are more successful than other villages, and not assume as is almost universally done in planning documents that all villages, all families, all tribes, etc., are the same.

A CULTURAL SURVIVAL MANIFESTO

TOWARDS A THEORY OF PARTICIPANT DEVELOPMENT AND CULTURAL PLURALISM WITHIN NATIONAL STATE STRUCTURES

Out of the ashes of the development ideology of the 1950s we must build anew. The phoenix of development will not and must not die. Standards of living must be raised, focusing on first, health, food shelter and clothing; second, increased cultural competences and third, increased access to material goods. The experience of development should be culturally and personally enriching to all, not a degrading experience in which the people "being developed" are turned into objects while the developers are turned into privileged and seigneural expeditors of The Plan, alienated from the developees. Technological advances should be used in such a way as to reinforce local participation and cultural pluralism, rather than to promote standardization, a political or profitable convenience which is too often imposed in the name of economic necessity. For example, the development of tape cassettes now makes it possible for localities to record and enjoy their own traditional music and entertainment, and advances in radio and television technology could be used to bring local and specialized programming to differing regional audiences. Similarly, rural development ought to become increasingly flexible providing economic returns to both large and small enterprises. Cultural survival does not mean isolating groups from access to modern technology and certainly not the maintenance of cultural identities by freezing minorities in a subordinate position based on non-majority markers. On the contrary, cultural survival also involves flexibility: the ability to reinterpret

traditions creatively so as to give a sense of continuity and groundedness (roots, identity, pride, self-confidence) as well as a sense of participation in the wider culture, or at least a sense of security and lack of threat from that wider culture. Development ideology is itself in need of reinterpretation to make these goals possible. In the 1950s ideology, development was associated with national integration as well as with technology as the cure-all for problems of poverty, relative deprivation, and other social structural deformities. There was consequently little room for fostering cultural differences or local initiatives. In the third world, cultural differences and regionalism were perceived as direct threats to national integrity. In few countries of the contemporary world (and in none of the cases considered here) need this still be the case: indeed quite the reverse, for in countries like Iran and the Sudan failure to provide for regional and cultural differences are a threat to the stability of the polity. With the failure of the traditional development ideology to ameliorate social structural deformities, notions of structural underdevelopment no longer seem so wild-eyed and have been appropriated into the common wisdom.

The cases considered here take as their focal concern the issue of social structural deformities and the contribution cultural pluralism and local participation can make to their amelioration. They demonstrate this contribution concretely, not merely as programmatic rhetoric: that is, they point to (a) successful examples, and (b) the destructive effect of programs which do not have these concerns constantly in mind. The destructive effects are not merely to the local populations but ultimately to the stability of the polity itself as the revolution in Iran, the civil war in the Sudan, and the fears about de-militarization of the government in Brazil potentially reveal.

The cases reviewed here also have a secondary goal of illustrating the anthropological as opposed to the technological approach in planning. While the latter attempts to exclude political and administrative exigencies, the former includes them as one of the most important components of development. This requires a dynamic and processual view of any development effort rather than a static series of phases of implementation. Indeed large-scale projects usually begin with models including social goals, but subsequently ignore the social goals as project evaluations shift to rationalized economic indices. One needs to build into the political process of review and refunding a social lobby. Minimally this can be done by having anthropologists monitor the project over time; more effectively such monitoring should be backed by forums for information feed-back to all levels of participation and by politically structured commitment to social goals. This latter can probably only be done by demonstrating self-interest in having a satisfied peasant or laboring work-force, with possibilities of advancement. Opportunities are more important than actual satisfaction of wants: to be able to struggle for a better life is preferable to Big Brother paradise.

PROTECTING THE POLITICALLY WEAK FROM UNINTENDED CONSEQUENCES:

A SYNTHETIC OVERVIEW OF FOUR COUNTRIES:

GENOCIDE * ETHNIC MINORITIES * PROLETARIANIZATION

We are particularly concerned with three types of problems: genocide, ethnic minorities who are disproportionately disadvantaged, and the specific form of proletarianization which can be caused by displacement from development project areas. While in a number of cases, systematic analysis leads us to suggest that national planning strategies might well be reconsidered -- especially in Brazil and Iran -- our immediate concern here is with intermediate strategies to protect people from unnecessary negative consequences of the three aforementioned types. We recognize that development tends to be the result of powerful political and financial pressures; nonetheless we think protective measures can be included in the planning process and that these can be sold as having not merely moral but long-term socio-economic payoffs.

Genocide

Of the four countries, genocide is primarily a problem in Brazil, and can represent similar problems in other Latin American countries and Southeast Asia. It is used here to refer to the annihilation of tribal peoples in the course of development, irrespective of whether such a result was intended. European contact with tribal peoples throughout the Americas has resulted in a severe decline in the Indian populations and the extinction of many Indian

peoples. Brazil's Transamazonian project threatens Indian societies who have hitherto been comparatively protected by their remoteness. The dangers are not hypothetical, but well known. Disease was, and still is, the most important agent of destruction. Small tribes may be effectively wiped out by diseases brought to them on contact. Meanwhile frontier expansion in Brazil, as elsewhere, usually leads to the killing of Indians by settlers attempting in this way to settle the question of land title permanently. Alternatively Indians are viewed as obstacles to development who must be physically eliminated or at least moved away. But where to? Alternative lands are sometimes promised, rarely provided and invariably inadequate. More often the Indians are simply dispossessed. Their way of life is shattered. They are deprived of their means of subsistence and forced to enter the larger society at its poorest level, subject to exploitation and with no chance of preserving or adapting old cultural values to a new situation. Brazilian planners have usually ignored the Indians, sometimes half-heartedly attempted to relocate them, and lately tended to insist that they must be "assimilated" as rapidly as possible, a process which does not guarantee their physical survival and insures their cultural disappearance.

Ethnic Minorities

The clearest cases of ethnic minority competition would seem to be the Sudan and Afghanistan.

In the Sudan, development is being used consciously as a tool to dampen ethnic competition and rivalries; in practice, however,

development projects are by no means free of ethnic competition as the case studies presented here demonstrate.

The devastation caused by the 1956-72 civil war (itself the result of an attempt to create an independent Southern Sudan) brought international attention to the antagonosm between the predominantly Muslim, Arabic Northern population and the Non-Muslim (pagan and Christian), African Southern tribal populations. Since the 1972 peace treaty, however divisions have re-emerged all over the Sudan. In the Southern provinces, while cultural horizons now extend beyond tribal boundaries, the war-time solidarity has vanished -- certain Dinka tribes have been able to use their influence at the new Ministry for Southern Affairs to promote projects to their benefit, over their ethnic rivals. This is most graphically shown by local reactions to the Jonglei canal scheme, which will flow through Dinka lands.

At the same time, development projects in the North have altered inter-ethnic relations as well as other aspects of the social structure. By all accounts, the last two decades have seen a marked increase in migration, both permanent and seasonal. Following the incipient industrialization, migration to the Khartoum-Omdurman metropolitan area has increased -- but more importantly, so has the seasonal rural migration of tribal work-gangs to irrigated areas during harvest periods. This indicates a substitution of wage-labor for more traditional forms of co-operation which is most clearly illustrated on the Gezira scheme. There, individual tenants prefer subcontracting Western migrants rather than using the traditional reciprocities of

labor and credit; if this continues to increase, we might expect the creation of a landless rural proletariat (see below).

Development schemes do not have to be as large-scale as the Gezira or Jonglei projects to have an impact on ethnic relations. Among the dozens of smaller-scale projects now under way in the Sudan, we have chosen to present the Khasm el Girba/"New Halfa" scheme to show the problems of two local ethnic groups with different, even opposed, modes of production. It was initiated as a resettlement area for a large Nubian population displaced by the Aswan hydroelectric project; the on-scheme population now ethnically mixed, has encountered management problems and declining productivity, while relations with their off-scheme neighbors, the Burana semi-nomadic pastoralists, have become increasingly strained due to competition between cash-cropping and animal husbandry in the context of scarce water supplies.

The Sudanese government has come a long way, since the Civil War, in moving toward a multi-ethnic society; however there are groups whose interests must be promoted if they are not to be sacrificed in the quest for increased production and growth in <u>average</u> per capita income. Among these neglected marginal populations, the nomadic and semi-nomadic desert tribes in the eastern and western areas outside the Nile Valley in the Northern Sudan, as well as all non-Dinka tribes in the South merit more careful attention in future. Ethnic affiliations in the Sudan probably present a more complex configuration than in the other countries discussed here -- by way of example, there are some fifty linguistic groups in the Southern Region alone -- nevertheless ethnicity

remains an important influence on the success or failure of economic strategies.

In Afghanistan, political control was in the hands of the Pashtuns. Until the late 19th century, the Pashtun monarchy did not have direct control over non-Pashtun areas. In the north for example the Afghan government ruled through local Uzbek and Tajik elites. More remote groups like Hazaras in the central Hindu Kush and the Nuristanis east of Kabul were independent of central control. It was Amir Abdur Rahman (1880-1901) who put the central government firmly in control. Taking power after a long series of civil wars, Abdur Rahman was determined to directly control all parts of the country. In war after war he put down many rebellions and launched campaigns against independent regions of the country. In this process he took full advantage of tribal divisions within the country. Abdur Rahman used his own Durrani Pashtuns against the larger Ghilzai Pashtuns. He used Pashtun tribesmen as a whole against the Hazaras and Nuristanis. After putting down a revolt by his brother, supported by the north, Kabul ruled northern Afghanistan directly. In this bloody series of was Abdur Rahman unified the country and set up a governmental model based on manipulating ethnic differences. Rebellious Pashtuns were moved from their homeland in the south to alien regions in the north. Government officials were almost always Pashtuns serving either in non-Pashtun regions or away from their own homes.

Ethnic and tribal differences played an important role in successive Afghan governments. The two development projects examined in depth here cannot be understood without this political background.

The development of Qataghan began in the 1930's as a large scale private investment by Afghanistan's first bank and the provincial governor. Qataghan was picked because of its high potential for cotton and rice growing which proved highly profitable. New settlers were needed to farm reclaimed swamps and land was offered to all comers at an attractive price. Traditionally an Uzbek area the first developments in Qataghan were open to all ethnic groups with little discrimination -- the developers wanted the land in production and it made little difference to them which tribal groups came.

The same was not true for the government in Kabul. It was not happy that a major development project, which they did not control, was located in a non-Pashtun region. As time went on, and the development proved successful, the government demanded that Pashtuns receive preferential treatment. The areas developed latest now have the largest percentage of Pashtuns. By increasing the number of Pashtuns the government hoped to tighten its grip on the north by increasing the number of tribesmen who would look upon the government as an ally. Ironically many Pashtuns were forcibly moved north for rebelling against Kabul but once in alien country became loyal supporters of the Pashtun government. Favoritism towards Pashtuns by the government is viewed by other groups in the north as oppressive.

The Helmand project had political objectives from the start. By the end of World War II the Afghan government had accumulated a large hard currency surplus. They chose to use this money to develop the Helmand region in the southwest in large part as a balance to

development in the north. The Helmand was in the heart of the Durrani Pashtun land, the tribe from which the monarchy came. A project there was seen as building a more stable political base by rewarding traditional supporters. Secondly new land in the area was to be used to settle nomadic Pashtun tribesmen who migrated annually to Pakistan. The Afghan government wished to put an end to this migration.

The failure of the project was viewed as inevitable from the start by many observers. The strong support for the program, that even if successful would not yield a great economic return, stemmed from traditional political considerations in Kabul to maintain Pashtun domination by favoring Pashtuns. While the direct impact on other ethnic groups was minimal, the indirect impact was important. Other areas of the country were neglected because so much of the Afghan government's money and attention was directed at the Helmand. Huge amounts of money poured into a failing development sacrificed the potential in other parts of the country.

In Iran, ethnic issues are a concern as well, if to a lesser degree reflected in the major development projects. There are two kinds of minority groups in Iran: linguistic and religious. The policy of the Pahlavi government was to make religious differences a private and personal matter. With the rise of an Islamic republic, religious affiliation has become again a more open political issue. Only four religions are recognized in Iran: Islam, Zoroastrianism, Judiasm, and Christianity. Bahaism -- the largest religious minority -- is denied not only recognition (and thus legal access to birth and

marriage certificates or public sector jobs) but is subject to harrassment as an alien political force. Even for Jews, Christians, Zoroastrians and non-majority sect Muslims (e.g., Sunnis and Ismailis), despite legal tolerance, informal pressures make employment in public sector jobs precarious.

Linguistic minorities -- Azaris and other Turkic speakers, Kurds, Arabs, and Baluchis -- present a more sizeable problem. The Pahlavi government policy was linguistic unification. During the 1978 revolutionary movement, these minorities demanded the right to publish in their own language, to teach their language in school, to have greater rights to appoint local and regional officials. While these demands were acceptable to the liberal bourgeois faction of the revolution (represented in part by Prime Minister Bazargan), they were unacceptable to Ayatollah Khomeini and thus to his followers. The division of interests during the early phases of the revolution (1979) therefore tended to divide upon religious, rather than linguistic grounds: the Kurds, the Arabs, the Baluchis, and Turkic speakers such as the Turkomen, the Qashqai, and the Bakhtiari tend to be Sunnis and suspicious of Khomeini. The Azaris, while not solidly behind Khomeini (preferring Ayatollah Shariatmadari) did not press their minority claims; they are largely Shiite. Given the fact that the Azaris were the most vocal protesters against the stifling of their culture by the Pahlavis, one suspects that if Khomeini has his way, this quiescence will not last.

In any case, the two development projects treated in depth here, although in regions which have Turkic and Arabic speaking populations,

seem to have directly affected primarily Persian-speakers. There is no evidence that there was any deliberate attempt to place major projects only in Persian-speaking areas. Less advanced projects of a similar sort (e.g., the Dasht-e Moghan Project on the Aras River in northern Azarbaijan on Shahsavand and Azari territory; the Selseleh Project in Luristan; etc.) were started, and the dynamics of their social impact are thought to be but variants of the dynamics which can be seen on these two earlier projects. While there is practically no information available on the Aras River Project, preliminary information on the Selseleh Project indicates that it like the Pilot Project of the Dez Project included some successful ideas, but that given the political environment the successes were fragile. Both projects have examples of success that might well be contemplated by an interested post-revolutionary government. But ethnicity does not seem to be a major issue in any of these cases.

Proletarianization

Iran, Brazil, and the Sudan all present important variations of this problem. In Iran one of the projects shows how the problem could be avoided. The Qazvin Development project started in a fashion which predictably could have led to the squeezing of rural labor off the land into an urban economy unable to absorb it. However, Qazvin at the same time was made into an industrial growth pole whose labor demands absorbed this excess rural labor, and indeed made Qazvin a migration

attraction pole for other regions. In Khuzistan there was simple displacement of peasants from the land into "labor centers;" some of this population was rehired by the agrobusinesses, the rest was placed on a welfare system, which quite deliberately and systematically denied the population any means or encouragement for self-organization and self-help. Although the problem of excess labor need not be seen as a malicious objective (creating a reserve industrial labor pool) by planners -- they were genuinely concerned by the inability to create industrial jobs fast enough to absorb the labor force -- the manner in which the labor centers were organized can only be seen as a ruthless and objectionable means of political control.

In Brazil the problem of proletarianization was more of an economic-social process than a simple political control one. The northeast already had a huge impoverished population. Unlike Iran there was no need to create a pool of people for new work. They were there and creating a tremendous social problem. Initially the Amazon projects were designed to siphon off population from the northeast into the sparsely inhabited interior. A huge series of agricultural villages connected by the Transamazon highway would give a livelihood to unemployed northeasterners without having to tackle the politically explosive problems of land ownership in the northeast itself.

This plan was dropped in favor of creating huge cattle ranches. These ranches provided far less opportunity to landless northeasterners. Indeed many who settled under the initial plan lost their land to more sophisticated and well financed cattle ranches. The problem was

intensified by the need to bring in large amounts of labor to clear the forests, for which there was no further useful employment. Instead of creating a class of independent farmers in a frontier area, the large ranches imposed the old Brazilian social structure on the interior, creating a mass of impoverished rural migrants, directly dependent on the large landowners, with no alternative employment.

In the Sudan, the Gezira project is the main focus of rural proletarianization. Despite the growth of Khartoum-Omdurman, the Sudanese economy remains overwhelmingly agricultural in character, and planning for growth acknowledges that this will remain the case. In the Gezira project, now the largest irrigation scheme in Africa, the increasing prevalence of wage labor supplied by migrant workers is one of a number of factors, along with the inefficiency of the joint-account system and overdependence on world market cashcrop prices, which puts pressure on poorer tenants during the rush to harvest crops. It would appear that this type of irrigated scheme, which requires high initial capital investment and is subject to persistent problems, makes the Gezira an inappropriate model for further projects outside Blue Nile province. For similar reasons the development of large-scale mechanized farming in rainfed areas, would probably be subject to inefficiency and inequitable distribution of wealth. To avoid the creation of a potentially unstable, large landless rural proletariat, the development of smaller schemes, combining improved traditional methods of agriculture with a determined effort to improve animal husbandry among groups which keep livestock,

remains of paramount importance. Sudanese social relations remain based on a mixture of class and ethnic lines; these lines may become only too apparent, and perhaps dangerously so, if and when ethnic discrimination and class inequalities are allowed to reinforce each other in the context of unstable market prices for cash crops and overdependence on migrant labor.

Project Comparisons

In our comparison of cases we have included two, the Gezira scheme in the Sudan, and Qataghan development in northeastern Afghanistan, that may seem from another age. Gezira was developed as part of a British colonial venture to insure a better cotton supply beginning in the 1920's. Qataghan was reclaimed from swamp to provide land for rice and cotton production beginning in the 1930's. The literature on development by contrast focuses almost exclusively on projects begun since World War II. The rise of newly independent nation states, the great increase in national and international aid, and the sheer number of projects, obviously justifies this attention. But to ignore the history of development before this period is a mistake because they can provide many relevant lessons -- in part because they are remote from political passions and defensive rationalizations. Agricultural development has after all been an important part of man's history for thousands of years. Building irrigation systems, terracing land, intensifying production, introducing new crops, or expansion into

frontier areas has been an ongoing process -- with some areas in continuous production, others just the bones of systems that failed for one reason or another. The age of colonial empires spawned economic development projects on an international scale, often with great economic success. While the political system which underlay this expansion eventually collapsed, it would be shortsighted not to look at as many projects from different periods and cultures as possible if any attempt to find structural regulation is to be made.

Although Gezira was a classic colonial development project and Qatghan was privately financed by Afghan capitalists in their own country, the two projects show striking structural similarities in comparison to modern development projects which may help explain their success.

The most important element was a long time frame. Both projects were envisioned as the work of decades, not a few years. Given the size of these projects and the number of people who eventually settled in them, this extended period provided a number of advantages and safeguards. With decades in mind the planners first turned their attention to the most easily and profitably developed areas. This provided a productive core that gave a quick return on capital that could be reinvested in further development, made an attractive example to assure potential immigrants and investors that their money and labor could be invested for the long term with success, and enabled planners to correct mistakes made in the core area before engaging in expansion elsewhere. Administratively this incremental growth was far easier

to handle than a quantum jump. Developing sections were frontier sections of an already functioning system.

The second major similarity in the two projects was that the developers were committed to the project for the long term. Colonial administrators expected to spend their working lives in the region, perhaps with the project itself. Their careers were linked to the project they planned and administered. Afghan investors in Qataghan moved into the region where they established towns. Since this was their new home they took a personal interest in regional development. Unlike government officials who spent a few years in the area and were then transferred, the cotton company had its headquarters there. In both areas planners and administrators became familiar with local conditions, politics, and personalities. The kind of social and economic data now collected for project planning was in their heads -- and constantly updated. This does not mean they always had the best interests of the people in the project at heart -- indeed they usually manipulated the system to their advantage -- but they did know how things worked, and what could or couldn't be accomplished.

The third major similarity was that the projects had real priorities and were not burdened with ancillary development. In both cases the goal was to grow cotton, and some rice in Qataghan. Land was provided for villages but the developers did not build houses for farmers or tell them who their neighbors would be. The farmers were left to construct their own houses how and when they saw fit. Should

he build a temporary shelter and put his money in other things for a few years he was free to do so. Villages were settled by kin groups and therefore carried a functioning social system with them. The planners emphasis on making the economic part work later produced demands for other facilities, but since this was the foundation of project, it was in place before other elements were added.

The comparison between the new projects we analyzed and the features of the old ones is striking. The time frame for modern projects is never decades. Five years seems to be about the most popular figure to get things off the ground. The modern developments of the Transamazonian highway, Khuzistan irrigation project and the Jonglai canal all demanded that large areas be brought into production rapidly. Construction, it turned out, could physically develop a large area far faster than people could reasonably be expected to usefully fill it. The safeguards inherent in starting from a productive core and working outward were missing in the large modern projects. The Helmand River Valley project in particular invested large amounts of money in irrigation facilities for economically marginal or useless land that was never farmed. The large projects also put a huge burden on the administrative abilities of the national governments. Qataghan expanded without trouble with the same inefficient governments that proved a block to development in Helmand where everything had to be started from scratch.

In none of the modern projects were the developers committed to the long term. Foreign experts and planners not only rarely stayed

more than a few years with a project, but moved from one part of the world to another where much of the detailed local knowledge they had acquired was useless. Even in Brazil which used its own resources the government was unwilling to put its own people there permanently and local government devolved in a feudal manner on the big ranchers and their representatives, who did live there. This contributed, along with other factors such as the balance of payments crisis, to a rapid abandonment of efforts to relocate smallholders in favor of large scale cattle ranching.

Finally the modern projects seem overburdened with ancillary development. A modern project is expected to provide schools, clinics, houses for farmers, paved roads, sewage, indoor running water, etc., as well as make the land fit to produce, all at the same time. Not only does this expand the project's costs, it obscures priorities so that there is no initial consensus about the project's ultimate goal -- so that many of the project's aims may come into conflict. The large number of different facets of a project also leads to overplanning. In Khuzistan the houses and the town planning were disliked by the residents who were under orders not to change anything. In the Helmand schools and clinics were built but there was never any hope of staffing them. In both Helmand and Khuzistan the old village social structures were ignored when people were moved to new areas creating social problems which in the Helmand project led to the collapse of the new villages. It was a notable feature of the older projects that they recognized the usefulness of allowing kin groups to settle as

a unit in the absence of compelling reasons to oppose it. Brazil's Transamazonian highway also suffered from overplanning that was so much out of proportion with reality the project as planned was simply allowed to die, whereas a simpler plan might have stood a chance of success in settling poor farmers from the northeast.

It is not our intention to argue that colonialists made better developers. Rather we argue that the planning process itself has not been carefully examined. The prototype of many large scale projects, including the Khuzistan and Helmand developments, was the Tennessee Valley Authority (TVA) which was very successful. It meets the same criteria as do the older projects examined above. It was planned with a long time frame; was put into place and run by committed developers who were permanently based in the region and who stayed with the projects as a career; and had well defined priorities which left much ancillary development to local and state governments. However when the TVA model was copied elsewhere the main element imported was the TVA's administrative structure that facilitated regional development by cutting through many layers of government. This was an important element -- but only one of many. The future of Khuzistan and Helmand even with TVA style organizations demonstrates that while such an administrative structure may be necessary, it does not guarantee success. Finally it is noteworthy that the older projects approached social relations with an attitude of respect based on the need for local cooperation to make the project work. The projects that failed assumed that they could either order that

cooperation or that they could engage in social engineering with the same ease as dam building. As recent events in Iran have shown far more attention was paid to potential engineering problems than with equally difficult human problems.

New Development Approaches for the 1980s

Learning from the Past:

Afghanistan, Brazil, Iran, Sudan

A Cultural Survival Report

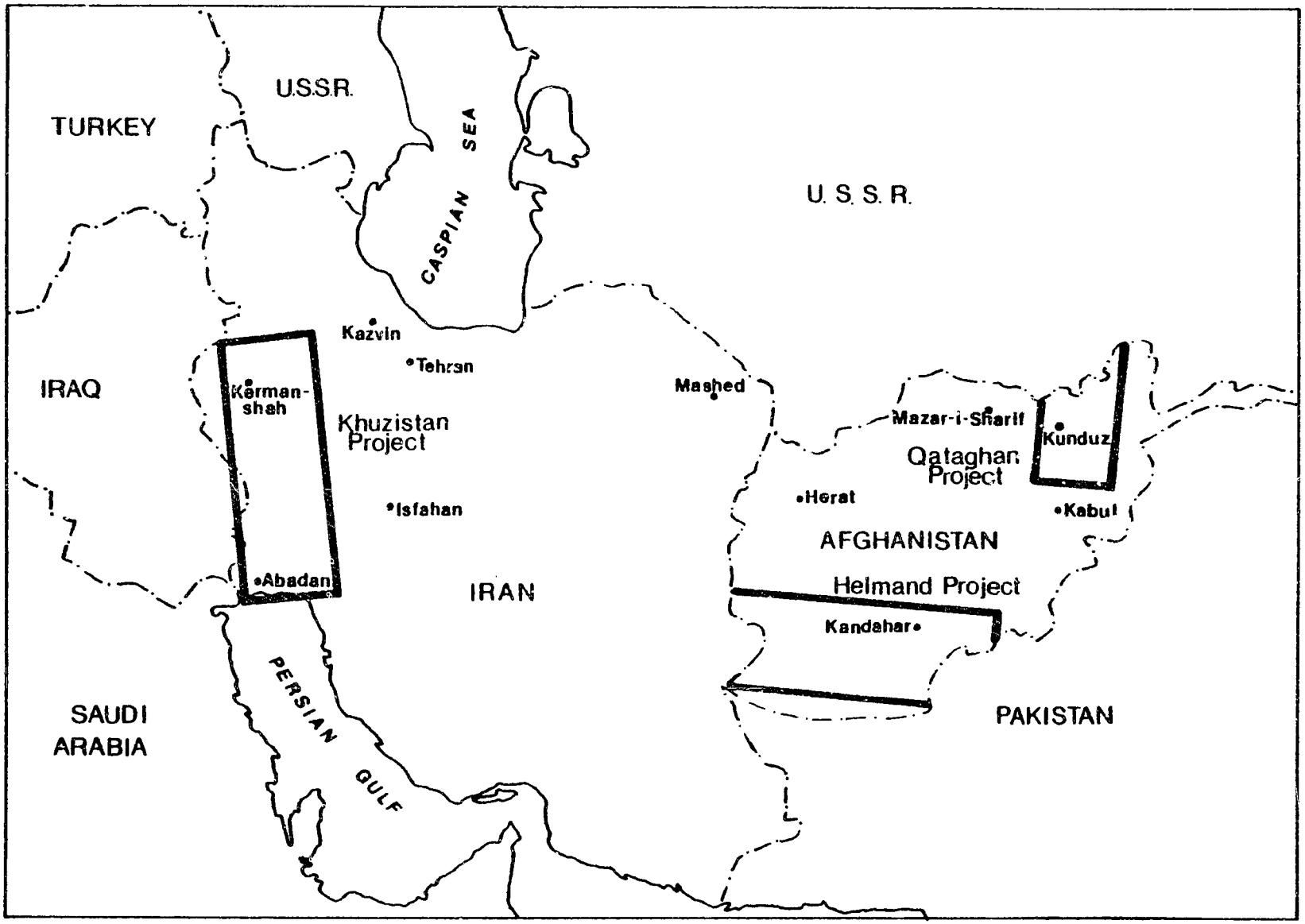
March 1980

Social Structural Parameters

		Productivity	Use of Trad. Social Struct.	Class Formation	Pluralism	Local Level Participation
SUDAN						
Gezira	Cotton export crop (2 million acres)	?	Destruction of kin & communal networks	94,000 tenants 400,000 seasonal cotton-pickers	Incipient ethnic conflict	Minimal: Gvt. owns land can't be used Tenants can't touch irrig. pipes
Khasim el Ghirba & New Halfa	Cotton (wheat and groundnuts)	Negative	?	21,968 tenants of 15 feddan (160,000 pop.) Refiers & subrenancies: necessary maintenance of pastoral (Butana) or urban wage (Nubian)	Butana got less good land Nubians cant make a living	Minimal: govt production schedules: cannot grow other crops
Jonglei (planned)	Irrigation & pastoralism				Dinka (and secondarily Nuer & Shilluk) have sufficient political clout to affect the planning process	
BRAZIL						
Transamazonica	Change from small scale colonization to large scale agriculture & cattle ranching	(3700 families instead of 1 million) Yields fell off (agr) ?cattle ranches?	Transfer of class relations from NE Destruc of Indian society & certainly of independence	landlord-corp.: "slave-like" labor impoverished caboclos Indians - semi-wage	Indian reserves Among the labor force-?	Abandoned to landowner level
IRAN						
Khuzistan (DIP)	Irrig. export veg.	poor	Destruction of	A few peasant villages state farm, farm corp., &agro-businesses wage-labor reserve labor force	Destruction of	Destruction of
	peasantry	up some	yes		yes	no
Qazvin	foods & indus. crops	Increased (tho less than hoped)	some	Mechanized & partially collectivized farmers, indus labor force	gvt guided (may not touch orchard)	
Qataghan	Cotton	Increased	Yes	Gradual creation of modern farming & pastoral entrepreneurs	Yes	Yes, tho also gvt. or Spinzar guided
Helmand		Negative	Settlement of tribes	?		Minimal

Economic Development in Afghanistan and Iran

T. J. Barfield and M. J. Fischer


TURKEY
U.S.S.R.
CASPIAN SEA
U. S. S. R.
IRAQ
Kazvin
Tehran
Kermanshah
Khuzistan Project
Isfahan
Abadan
IRAN
Mashed
Mazar-i-Sharif
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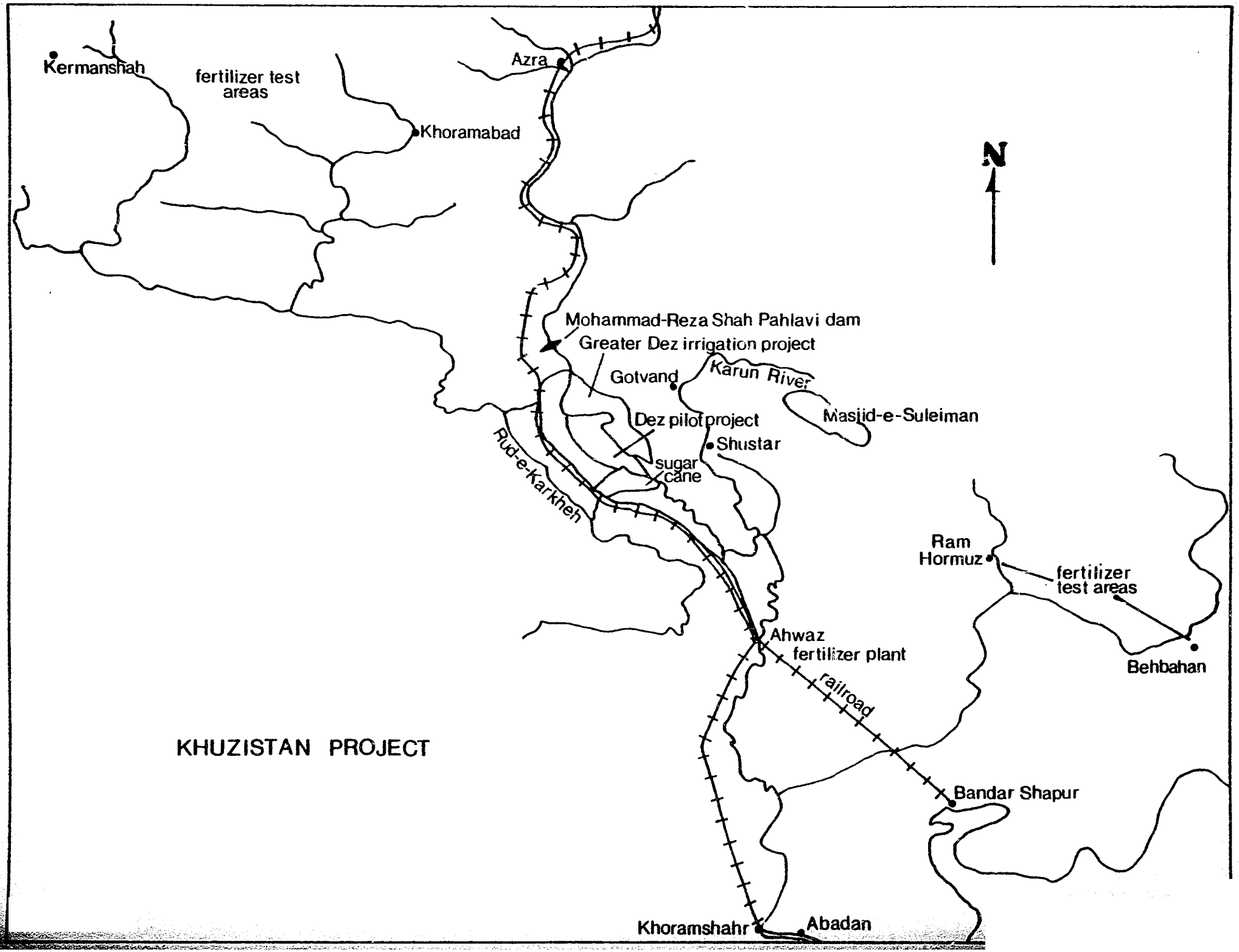
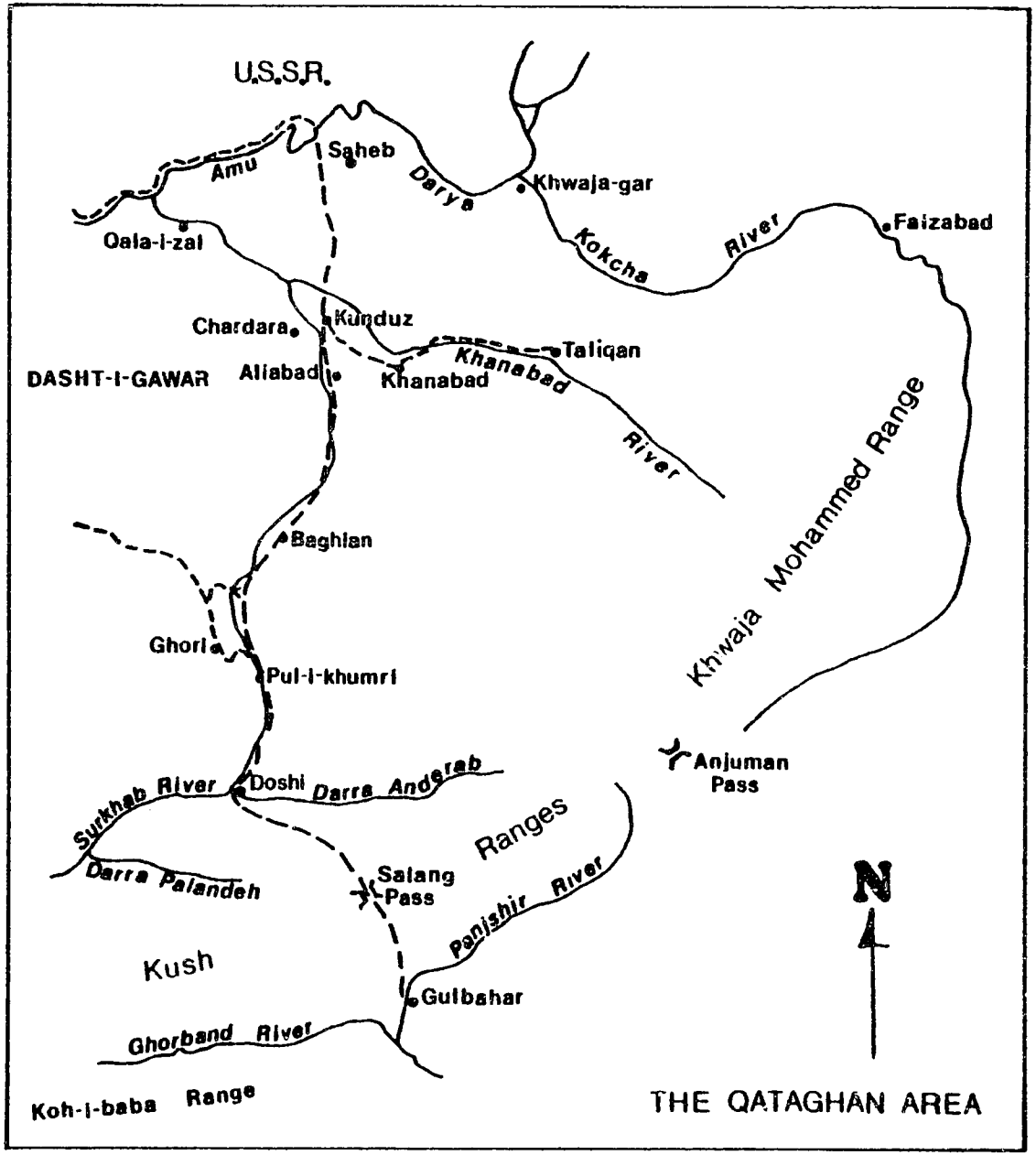
PAKISTAN
SAUDI ARABIA
PERSIAN GULF



KHUZISTAN PROJECT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Aliabad
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Baghlan
Ghori
Pul-i-khumri
Anjuman
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Doshi
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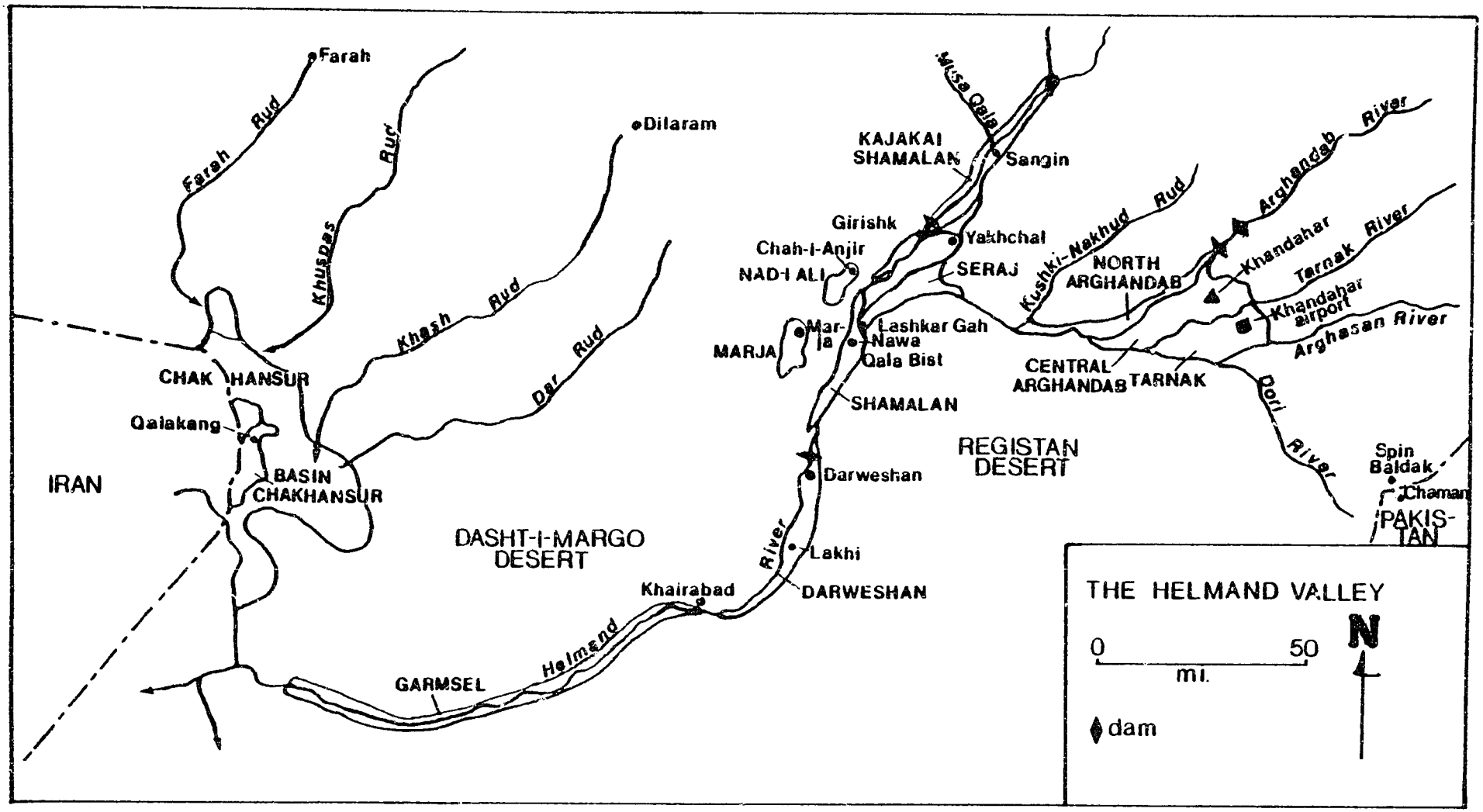
THE QATAGHAN AREA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Contents

Khuzistan

Summary of Case Features

Dez Irrigation Project

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(ii) Khuzistan and Land Reform: Rahmatabad

(iii) Medium-sized

(b) Integrated Regional Development Authority: KWPA

(i) Political

(ii) Administrative

(iii) Mobilization & Labor Management

(c) Large-scale Agrobusiness

(d) State Farms, Farm corporations and cooperatives

(i) State Farms: Haft Tepeh Sugar Plantation

(ii) Cooperatives

(iii) Farm Corporations

Human Rights Summary

Khuzistan

National Government Goals

Economic: foreign exchange earnings from early vegetables for Europe; increased standard of living for farmers; (?) release of some rural population for industrial labor force; regional growth pole

Political: (?) land-holding peasantry grateful to the government for land reform; non-subsistence, market integrated capitalist form of agriculture in large units controllable from Teheran; provision of reserve labor force for industrial agriculture and urban industry

Funding: Government of Iran, World Bank (1960 and 1969 loans)

Ethnic Groups: Project Area: primarily Persian-speakers, some Arabs

Region: Arabs, Turkish speakers, Persian speakers

Accomplishments: productivity increased only marginally; agrobusiness management proved too large-scale to be secure (and collapsed); 38,000 peasant families pushed off the land; long-term ecological and economic reorganization still in question

Implementation: example of a major conflict between integrated regional development and insistence by a central government of control from the capital through ministries with competing responsibilities; example of major contradiction between running everything from the top to speed development and prevent reaction, and the need for local cooperative organization to generate self-sustained growth; example of conflict between major reorganization of ecology, agricultural technology and management (and its long time frame to work out the bugs) and the even longer time frame (?) for development from the bottom up, i.e., between agrobusiness strategies and peasant strategies

The Near East has been the site of development projects for well over 5000 years. The first civilizations of the region were built around elaborate irrigation systems. Then as now water control projects were the most important aspect of development. Today industrialization has become a second goal in many countries, but the importance of the agricultural economy is still critical.

Development goals and projects raise ethical issues about how both the sacrifice needed to obtain national development, and the distribution of increased production should be shared. Of critical importance in this process is the place of national minorities. Are they called on to make most of the sacrifices for national development only to receive few benefits, or conversely do small minorities receive disproportionate returns at the expense of other groups? Empirically the situation varies tremendously affected by past history, ownership patterns, government policies or type of development. In many cases ethnic or religious minority status is secondary to the individual's position in the class structure. Burdens and benefits of development often are best analysed in terms of class, in which the poor of all groups become the victims of a process over which they have no control.

In order to illustrate the position of minorities in development we have chosen to examine four cases from Iran and Afghanistan

1. Dez Irrigation Project, Khuzistan, southwestern Iran (1960s and 1970s)
2. Qazvin Development Project, north central Iran (1960s and 1970s)
3. Qataghan, northeastern Afghanistan (1930s)
4. Helmand Valley, southwestern Afghanistan (1950s)

The reasons behind these projects, their implementation, and politics vary considerably. Two major conclusions that will be documented in the cases are that the importance of ethnic identity in the

development is a factor based on how effectively the central government controlled the country before development began, and that projects fail most often from an inability to mobilise local support.

The Iranian cases show in that country it was a class of people rather than minority groups that were expected to make the major sacrifices, often for development that by encouraging exports would benefit only the national state. These classes of poor peasants and sharecroppers were powerless politically and could not easily resist the power of planners supported from the capital. Thus while Iran is a multi-ethnic state with large minority problems, the choice of placement of projects and their implementation was not primarily based on the location of minority groups. This was because development was not viewed as a tool to deal with minorities. Rather it was military force and resettlement of people, particularly in the 1920s and 1930s under Riza Shah, that destroyed the power of most tribal groups in Iran. By the time development began in Khuzistan, an Arab area, previous settlement of Persian speaking peasants created a situation in which it was Persian peasants rather than Arabs who lost land and livelihoods. Groups that had not been destroyed by Riza Shah, like the Kurds and Baluch people, were in remote areas in which the government did not place large scale development projects. The importance of an ethnic group in the politics of development stems directly from its place in the history of the national state's development. This can be seen most clearly in the two cases from Afghanistan. In Afghanistan the importance of ethnic groups in development was paramount. Unlike Iran

the Afghan state has never had full control over its tribal and ethnic components. Attempts to impose radical change in the country have generally ended with the destruction of the state as happened in 1929 when civil war toppled the king, and at present in the civil war with the new communist government. Afghanistan lacked a Reza Shah who militarily destroyed tribal groups, and politics in Afghanistan, where no ethnic group has an absolute majority, always is a question of minority politics. The successful development of Qataghan in a Turkic region of the country led the Pashtan controlled government to demand greater Pashtan immigration in the north so that this developing region would have a significant Pashtan population that would support the central government. The Helmand Valley project shows the same pattern of the government playing ethnic politics by demanding the construction of a large uneconomic project in order to benefit a Pashtan region. In a country like Afghanistan where the state is not an independent power development decisions were used as a device as much to keep the Pashtun's government in power as to develop the country.

The second conclusion of our case studies is that mobilization of local support is critical to a project's success. From our four examples Qazvin and Qataghan represent cases in which this was done successfully. Khuzistan and the Helmand Valley projects failed in this respect. In part this seems related to size and financial resources -- the greater the project in size and money, the less the role of local people in planning and implementation. But ultimately it is the

ability of local people to make the project work which determines its success. It is in this area where we feel that an anthropologist's contribution would have been most useful, but in Khuzistan where the object was to destroy the old to make way for the new anthropologists were seen as irrelevant and advice would have been taken as an attempt to obstruct progress. In the Helmand anthropological research would have shown that the plan to settle 3/4 million nomads was totally unrealistic and based on false assumptions about nomadism. Secondly tribal organization could have been used to facilitate development of new communities instead of contributing to their destruction. In Qazvin some anthropological advice was sought because training farmers was seen as crucial to the project's success. The developers in Qataghan used no outside experts but, forced to work closely with the people, the project was designed to be run by traditional technology and organization. Qataghan is evidence for the obvious fact that it is not anthropological advice, but appropriate planning, technology, and local support that makes projects work. To the extent that anthropologists provide a bridge between the world of the bureaucratic planners and the people in the area, explaining one to the other, their advice can prevent major misunderstandings and inappropriate designs.

The problem of agricultural transformation in Iran is central to Iran's modernization potential. Some sixty percent of the population still lives on the land, yet the food import bill in the 1970s was

enormous: $1.4 billion in 1975, and over $2 billion in the following years. Agricultural productivity rose less than 2.5 percent per year, while the population increased at 3.2 percent per year, and food consumption rose at ten percent per year.

The Dez Irrigation Project (DIP) was Iran's most ambitious irrigation project, intended to be the showcase of modern agricultural technology, one of several regional poles of growth, a major earner of foreign exchange, and a cornerstone of a diversified new economic structure. Its problems provide a fascinating microcosm of many of Iran's problems at large, not only in agricultural policy, but also in social and political organization.

The attitude of developers that they were taking land on which nothing previously existed has been lampooned by Goodell (1977): villages, of course, have existed here for millenia. Goodell is perhaps a bit hard on Lilienthal, the major developer, whose memoirs she uses for the lampoon, but if one looks at the situation in the mid-1970s, Goodell's anger on behalf of her friends in the old villages and the new towns is understandable.

Only 14 percent of the DIP of 240,000 acres made irrigable by the Dez Dam (completed in 1962) was reserved for small farmers; some 38,000 peasant families were expelled from 140,000 acres and were paid below market prices for their land if they owned it; by 1974 only some 50,000 acres were irrigated because of budget cuts and administrative problems in the KWPA, yields were not markedly higher than on

traditionally farmed land and summer crops were no longer cultivated, the agrobusinesses were still trying to manage enormous financial costs with relatively little return; the residents of the new towns constituted partially a welfare population, partially a reserve labor force, and a disaffected group politically.

There are two major explanations for these results, each emphasizing a slightly different aspect:

(1) Goodell (1977) and Fischer (1978b, drawing on Goodell) elaborate what the latter has tagged the "oriental despotism" paradox: There is a contradiction between wanting to direct social change from the top in order to speed it, and knowing that eventually self-sustained growth depends on local initiative. You cannot encourage and repress local initiative at the same time. There is a structural dilemma of a highly centralized state pursuing directed social change, especially when the state received enormous revenues from an industry (oil) which has relatively small impact on direct employment (37,000 to 67,000 persons, depending on whether one includes distribution personnel) and a relatively small multiplier effect on the domestic economy, where, in other words, the state can be relatively independent of its citizenry. This was aggravated by outside powers (especially the U.S.) who both supported the notion that "premature" introduction of democratic forms would retard social reform and development, and encouraged a military expansion of the state which reinforced its independence and autonomy from its own people. The state bureaucracy's use of divide-and-rule tactics, use of foreign advisors and personnel in preference to natives,

and use of corruption to channel access to economic and political resources became a disease by the 1970s. In sum, the form of the state destroyed, almost systematically, all mediating structures between itself and the individual, so that when something went wrong, as it inevitably would, there were no fine-tuning mechanisms for adjustment, and the project would have to be abandoned or changed from top to bottom. (Goodell complains that the DIP saw four major reorganizations in the space of a decade.) The difference between the Iranian case and the TVA or moshav models was the pervasive fear in Iran that what the state gives it can take away; there was no mobilization of local commitment.

(2) Halliday (1978) and Rene Dumont (1978) point out that land reform and the state interventions of the Khuzistan type were the means through which the state encouraged the capitalist transformation of the countryside, making land, labor, and capital all fully free marketable commodities. It was land reform in Iran rather than colonialism as in India and Ceylon. Unlike the latter cases, prior to land reform, there was no efficient taxation, nor much in the way of cash crops for export (except cotton, opium, dry fruits and nuts) to use to stimulate production. Nor was there a strong, interested landowner class with international ties available to block land reform: merchants who bought land did not transform the land along commercial lines (with some exceptions). Land reform and the agricultural projects introduced capitalist relations, and divided the population more sharply into owners and a large agricultural proletariat. What

it failed to do was mobilize rural resources to raise productivity, create a market for industry and create a dynamic relation between agriculture and industry.

At a less global level of criticism, several models of development were tried in Khuzistan, and to evaluate the above two explanations, one needs information on the implementation and results of these models: (a) an upgraded peasantry and medium sized commercial landowners, achieved through land reform; (b) an integrated regional development authority; (c) large-scale agrobusinesses; (d) state farms, farm corporations, and cooperatives; (e) rurally sited new towns for relocated labor.

a) Land reform, upgraded peasantry, and medium sized commercial farms.

(i) Land Reform

In the Kennedy years, the United States demanded land reform as the price of its continued support for the Shah. Land reform, which had been proposed to the Iranian government as long ago as 1909, was seen as a political and economic tool for progress. Politically, a peasantry owning its own land would be a stable conservative force; economically, small owners would be more hard-working and productive.

Previously, under Reza Shah (1925-41), some efforts at land reform had initiated the shift to private ownership at the expense of traditional usufruct rights: the civil code of 1928 made de facto possession prima facie evidence of ownership; tenants were made liable for harvest levels; the 1934 sale of state lands was set up so that

only the wealthy could buy; registration procedures allowed an increase in large landlords and cash tenancy arrangements.

In 1962-63 land reform was initiated as a major point of the White Revolution. It was pursued diligently for a year and then with increasing slowness. Politically it served to break the power of the land lords as a social category. Many of them had already been encouraged to diversity into industry, trade and the professions; and they were compensated with shares in state industries. Economically, the reform was intended to give a greater return to those who worked the land without disturbing the actual patterns of production, and to provide new credit, cooperative, educational, health and administrative facilities.

The degree to which the land reform fulfilled these social and economic goals has been heavily criticized on a variety of grounds. As summarized (in Fischer 1977), these were "that landless labourers, numbering 6 million in one estimate, received no benefit; that many landlords evaded expropriation of their best lands by transferring registration to wives, children and kin and by declaring land orchard or mechanized; that insufficient credit facilities were made available through the cooperatives and Agricultural Bank (and thus, e.g., in the Qum area rural emigration was encouraged because there was insufficient capital to maintain the irrigation system); that where the compulsory cooperativization was seriously experimented with -- as on the Qazvin Development Project -- government bureaucrats and engineers became the functional equivalents of the landlords excluding peasants from the

decision-making; that elsewhere the government "technical aid" consisted of political indoctrination rather than anything to do with agriculture; that wealth relations in some villages were reversed because former tenants were now larger owners than previous small holders and that class tensions within villages were exacerbated thereby and by the competition with mechanized agriculture; that the new village councils and houses of justice rapidly became ineffectual because they were powerless to deal with higher levels of the bureaucracy, and hence often called on their old landlords to intercede; that where cooperatives were consolidated into experimental farm corporations, returns to the individual farmer were lower than adjacent villages which had not been reformed; that richer peasants were buying out poorer peasants and creating a new, small landlord class, a process which would be encouraged in any case by fragmentation through inheritance of small holdings; that no minimum wages, unemployment benefits, or gleaning rights were provided for the landless labourers; etc."

(ii) Khuzistan and Land Reform: Rahmatabad.

Initially, the multipurpose Dez Dam (completed 1962) was to provide increased water for a land-reformed agrarian regime, which would give more people access to the land, but which would essentially rely on the cooperation of people already in the area, including the previous landlords. The World Bank, from the beginning, demanded evidence that the local population would cooperate (a condition for the 1962 loan of $42 million). The World Bank also pressed for a

less massive technological reorganization of the area than proposed by the Iranian government and its major advisor/contractor, Development and Resources Corporation (D&R). A 1958 proposal was rejected by the World Bank on the grounds that several smaller irrigation schemes and a thermal generating plant in Ahwaz were preferable to the large-scale project and multipurpose dam proposed by the Government of Iran and D&R. Still in 1966 most of the land below the Dez Dam was planned to be leased by the Khuzistan Water and Power Authority to peasants in ten acre lots, with cropping and irrigation patterns to be supervised by the KWPA. As noted above, eventually however, only 14% of the DIP was reserved for peasants, and even they did not feel secure from future expropriation.

Some villages did undergo land reform and were then left alone. The fullest study of such a village is that by Grace Goodell (1975, 1977), a village she calls "Rahmatabad" (Quiet Place). Both Goodell's study and the results of a three year Dez Pilot Irrigation Project (22,00 ha, involving 57 villages, of which two were Arab- and 55 were Persian-speaking), insisted upon by the World Bank as a condition for the 1962 loan, provide evidence that an improved peasantry would have been a viable development strategy. Informal comments of several agronomists working in the area also confirm this. Part of the success of the Dez Pilot Irrigation Project -- productivity rose three-fold -- was due to a team of 35 extension agents, plus the provision of short-term, medium-term and long-term credit (both of these became casualties of the rationalization of the larger Project).

For Rahmatabad, Goodell argues that land reform was "profound and in every important respect positive." The village was relatively self-sufficient in food production (except sugar, cooking oil, tea, meat, chick peas, potatoes and tomatoes). In the five years after land reform there was an "astounding leap in rural earnings," the village was practically rebuilt, the standard of living rose, and more would have been done if the government had guaranteed permanent tenure and supplied electricity. There were 39 households, of whom 25 received land shares; six were landless and relied on work outside the village; eight were landless and relied on work in the village. Being landless in this village did not mean being poorer than the average landed families: there was work, and new landless families were even admitted to the village. In general, the landless were recently sedentarized tribesmen who did not form a stagnant caste either economically or socially. Three of the four richest families today were among the poorest a generation ago: they prospered through shepherding contracts. Although productivity had increased only marginally if at all, Goodell suggests that the peasants were working out the proper strategies and testing the ceilings of their productive capacities with new fertilizers, seeds, and so on, in a conservative fashion incumbent on people whose lives depend on an adequate return, who cannot afford high risks with unknown techniques. The greatest fear the villagers had was that the government would reabsorb them into an agricultural corporation or an agrobusiness. Internally, there

was a sense of individual independence and cooperation -- they had a version of the traditional work teams (called here bonku, elsewhere in Iran boneh), and other communal organizations. Externally, they tried to protect themselves from meddling by a bureaucracy over which they had no leverage. This was a reflection not on the idea of a state providing services, but on its execution, by the administrative/political incentive structure of this particular state. Veterinarians sent to vaccinate cows merely clipped the cows' ears because that is all the inspectors would check. Cement lined irrigation canals reduced the amount of water available to the village, made it necessary to haggle with the Ministry of Water and Power for water, cut off some land, placed the village downstream from another village so that the water became less clean, and created a hazard of drowning for children and women washing clothes due to the steep sides of the canal. The village school which had had a resident teacher was now replaced with a new brick school on the outskirts of the village, staffed by mini-skirted Literacy Corpswomen who came each morning from Dezful in a taxi, demonstrated a lack of concern for village affairs, made demands for contributions for outside causes (flood relief in Africa), and hence were unwelcome. The lack of welcome was reflected in the lunches sent them by the village women: oversalted rice, stones in the rice, withered cucumbers. Thefts and disputes were kept from the police and gendarmes or the new House of Justice; better solve these things locally than get involved with the state which views villagers as ignorant wards.

Could a village such as this sustain growth over time? Goodell and the Pilot Irrigation Project indicate positive answers. Other studies also illustrate the way in which peasants respond to incentives and utilize their traditional cooperative organizations. Dillon's (1976) study of a village in Kirman, using Chayanov's framework of peasant economy, describes in detail a village which shared its labor between carpet weaving and agriculture. In this case the village was highly exploited by carpet merchants on a putting out system, but yet the return on carpets was marginally superior to agricultural labor. When prices rose in 1973-75 a similar village near Kashan experienced an ability to get out from under the putting out contracts, and to establish own-account looms. Cooperative organizations, derived from traditional village life, have been used to establish joint-stock companies to run deep wells, electricity generation, and glass blowing, and charity systems have moved from feasting in ritual fashion to supply of clothing and scholarship in support of urban migrants (Fischer 1973).

(iii) Medium-sized commercial farms

In 1968 an Agricultural Development Bank of Iran (ADBI) was established with World Bank aid in formulating the charter, training personnel, and three loans: in 1970 ($6.5 million), 1972 ($14 million), and 1974 ($40 million). The ADBI was to supply loans to the commercial sector (units with more than fifty hectares, and with technically-oriented modern management; agrobusinesses on nationalized land below

new dams). Most of the loans in Khuzistan appear to have gone to agrobusinesses rather than to medium-sized commerical farms.

b) Integrated Regional Development Authority: Khuzistan Water & Power Authority

A major model for the DIP was America's Tennessee Valley Authority, and the former head of the TVA, David Lilienthal, was brought in with his newly established (1955) Development and Resources Corporation in 1956 to plan, design, and manage the Project, including the Dez dam, the regional electric power system, irrigated agriculture, a sugar cane plantation, and the promotion of industrial uses for the local natural gas resources. (Two smaller irrigation schemes, a polyvinal chloride plant, and a community village program were dropped from the original plans for lack of funding or disagreement over implementation.) D&R managed the Project until 1963, when management passed to the Khuzistan Water and Power Authority (KWPA), but D&R continued to provide management assistance. World Bank funding was secured in 1962, after the 1958 proposal had been rejected, with several conditions: that the Bank be satisfied that local landowners would cooperate, that the Bank be satisfied about the competence of the local management and that a three year pilot scheme prove the feasibility of the project before construction begin on the main canal.

Lilienthal's memoirs and the New York office archives of D&R (deposited now at Princeton University) are major sources for understanding the formulation of the Khuzistan Project and for observing

the assertion of a number of goals which were to prove contradictory. Lilienthal claims his team came to the region after a number of UN experts had dismissed the area as unirrigable. D&R was proud of conquering a major engineering challenge, made possible financially through the Shah's personal interest in pushing the project as a top priority. (Nonetheless there were complaints about delayed payments by the Government of Iran, disputes about cost overruns, and constant need to renew statements of interest at the highest levels of the Iranian government in order to unblock things at lower levels.)

Lilienthal's statements showed concern with social mobilization. Development required public investment in dams, highways, and ports, but thereafter one must engage private entrepreneurship (1969: 2 (1955)). He was hopeful of being able to organize local talent in the process of construction and implementation. This was one of the strong points of the TVA experience: There was an esprit de corps among the building crews which were moved from site to site. Iran was to be different: a series of different contractors were used, and no esprit de corps of the TVA sort developed. In 1963 Lilienthal proudly commented that Reza Ansari (head of the KWPA) was promising a democratic organization of peasants: like a student to his teacher, so Ansari was to Lilienthal, as Lilienthal once was to Dr. H. A. Morgan (a somewhat benign memory of the struggles among the TVA troika), (1971: 448). The road to the economists' productivity, said Lilienthal, must begin by bringing out the latent vitality and spirit of the people. On irrigation schemes in particular, he warned, with the Helmand example in mind:

> Irrigation has proved to be a curse as much or more than a blessing in parts of Pakistan, in India, in the Helmand Valley of Afghanistan... The reason is that the irrigation has not taken advantage of what is known about land leveling, about drainage, about accurate measurement of water use and other things. So the tragic fact is...that millions of acres of once productive land have become dead, destroyed by salt, through the rise of the water table.
>
> Even when the agricultural experts know, technically, what should be done, they have not known how to teach that knowledge to the actual tillers of the land (1971: 265 (1961)); see also Vol VI: 95).

Lilienthal attempted to be vigilant regarding social organizational issues, e.g.:

(i) His team included a doctor, F. G. L. Gremliza with nine years experience in Egypt, who was hired to advise on the problems of schistosomiasis (danger of its spread with expanding irrigation), to do surveys of local medical problems, to provide some local clinic care, and to provide some of the feedback from the local level that an anthropologist might otherwise also supply: e.g., the need for cash as evidenced by the selling in the bazaar of the free tubes of ointment for treating trachoma which he left with patients.

(ii) He took credit for the agricultural extension work of the three year Pilot project (which however later became a casualty of the large-scale rationalization of the Project), and for 28 schools.

(iv) He had a housing study conducted by C. A. Doxiades which proposed a regional plan, including the notion of providing only nuclei of houses plus supplies of building materials, and allowing

the owners to expand the buildings at their own desire and with their own labor. The prohibition of expansion and modification of housing units in the new towns was to become a source of discontent in the 1970s.

Political, administrative and mobilization problems bedeviled the Project. Systematic information is probably only available in the files of the Project's headquarters in Andimeshk, but hints are scattered throughout Lilienthal's memoirs and the New York office archives, and they are of a pattern described in other accounts of Iranian organizations. In most general terms, the notion of an autonomous regional development project conflicted sharply with the structure of the national bureaucracy based on competing responsibilities by different ministries, with rights of intereference in the activities of one ministry by another. A few dates need be kept in mind:

1962 - The Dez dam is completed; the Dez Pilot Irrigation Project is initiated; Land Reform is declared.

1963 - The architect of the Land Reform, Arsanjani, resigns, complaining that insufficient funds are being made available and that the program is not being pursued sufficiently vigorously.

1964 - KWPA is put under the Ministry of Water and Power

1966 - KWPA acquires three quarters of the land below the Dam, allegedly to be opened to peasants; later that year,

Minister Rouhani and D&R agree to experiment with agrobusinesses.

1968 - The World Bank agrees to lend $30 million for 37,000 ha in units of ten hectares, with one large experimental agrobusiness of 3,800 ha.

1969 - Sept.: Rouhani leases 54,000 ha. to five agrobusinesses; negotiations with the World Bank continue: the Bank wants to limit agrobusinesses to 25,000 ha.; farm corporations are proposed by D&R, neither the Ministry of Water and Power nor the Ministry of Land Reform want to administer them: the Ministry of LandReform is stuck with them.

1972 - Further loan negotiations with the World Bank are unsuccessful.

1975 - The Ministry of Agriculture is put in charge of the new towns (sharaks).

(i) Political

At the beginning, the Project was under the Plan Organization, a unit established outside the ordinary bureaucracy to establish five year development plans and to streamline priority projects (see Baldwin 1966). In that early phase, Lilienthal had access to the Shah through Abol Hassan Ebtehaj as well. The major political competitor was only the Governor-General of Khuzistan, Mahdavi. Mahdavi first appears in Lilienthal's memoirs as a typical bureaucrat: he refuses

on Lilienthal's first site visit in 1955 to allow him to visit a poor village, but insists on showing off his prize demonstration garden. Things become more serious in 1962: Mahdavi had sponsored a small irrigation project on the Karhkeh river which was to irrigate 70,000 ha. The abutments had washed out several times and D&R estimates were that there was only water to irrigate 500 ha anyway. Miffed that "his absurd little dam" was a failure and D&R would not save it, Mahdavi began to organize the landowners to refuse to cooperate with D&R, to write letters to the Prime Minister complaining about D&R, and encouraging government agencies not to pay KWPA power bills. Lilienthal, worried because landowner cooperation was a condition for getting the World Bank loan, says Mahdavi "caused the Khuzistan program as much trouble as a battalion of enraged landowning sheikhs." There were other worries in 1962 and 1963 as well: there was a land reform program and the Dez Dam was completed, but Arsanjani, the architect of the Land Reform, resigned amid conflicting signals about how serious and thorough a land reform was intended.

In 1964 politics threatened to become more serious yet. The Plan Organization was reduced to a purely planning function, and the KWPA (which in 1961 began to take over management from D&R) came under the Ministry of Water and Power, headed by an initially antagonistic Minister, Mansur Rouhani. In 1966 Rouhani's deputy, Iraj Vehedi, replaced Lilienthal's friend Ansari as head of the KWPA. Later that year, however, a rapproachment occurred between D&R and Rouhani: they agreed to experiment with agrobusinesses. The KWPA acquired

three quarters of the land below the dam, in a program which was supposed to open the land to peasants under production guidance from the KWPA. 37,000 hectares were planned to be divided into ten hectare units; and one experimental large unit in the north of 3800 hectares. But in 1969 Rouhani leased 54,000 hectares to five agrobusiness developers. The World Bank tried to limit the agrobusiness experiments to 25,000 hectares. D&R proposed farm corporations (shares held by small landowners, but production decisions were made by agricultural experts, and mechanization was introduced) patterned after the Israeli moshav, and the administration of these became a political football: neither the Ministry of Water and Power nor the Ministry of Land Reform wanted responsibility; the latter got it.

In the 1970s four very large agrobusinesses were established but did not put as much land into production as they were given. They said it was because the KWPA had not completed the irrigation channels, which was true, because by this time the KWPA was suffering from reduced budgets in the Tehran allocations. Nonetheless some 38,000 peasant families were pushed off the land. If they owned land, they were compensated below market prices. New towns (sharaks) were provided for many of them, but they had to pay for their new housing. The sharaks were heavily subsidized and they became a welfare drain on the economy, but like many housing projects they were not particularly nice places to live. Inhabitants were not encouraged to expand or put their mark of individuality on their houses, nor to establish retail services, community organizations, or

the other amenities of urban life. On the contrary, an almost systematic destruction of community was enforced. Again the best description of a sharak can be found in Goodell (1977). By 1973 only 14 percent of the DIP was allocated to small peasants, there were four agricultural corporations composed of aggregations of 27 land-reformed villages, a mechanized state farm (Haft Tepeh Sugar Plantation) and four agrobusinesses.

(ii) Administrative

Administration and personnel within the project is also a problem which is hinted at in the D&R archives but systematic information is not available. In 1961 workforce figures are given as:

	Staff	Labor	Total	Foreign
Dez Dam Project, KDS	66	265	331	438
Dez Dam Project, subcontractors	20	1270	1290	
DIP, KDS	30	35	54	
DIP, subcontractors	11	68	79	165
Sugar Project, KDS	5	2	7	
Sugar Project, subcontractors	162	1808	1970	
Power Operations, KEG	58	59	117	14
Power Operations, subtractors	--	11	11	

	Staff	Labor	Total	Foreign
Central Services, KDS	176	331	498	42
	519	3849	4368	659

No breakdowns by ethnic background are available, except for a passing note that Lurs were used for dam construction. It is noted that it took one foreign specialist to train 5 Iranian electrical workers, or 20 village workers, or one auditor; i.e., it was relatively hard to train managerial workers. For the Sugar Cane Plantation, there are turnover rates for the period 1958-69, an operation which used some 35 expatriates and two thousand Iranians:

Hired Since 1958		Learned Fundamentals	Became Proficient	Unsuccessful
Unskilled	1688	--	636	1052
Semi-Skilled	435	55	128	252
Skilled	647	191	142	314
Staff	297	90	52	155
	3067	336	958	1773

In other words, there was a 52% overall failure rate; an 11% acceptable achievement rate; and a 31% success rate. Manual skills were more easily learned again than administrative skills (30% versus 18% success rate). Of the 435 semi-skilled workers listed above in the first column, 49% advanced from the unskilled category.

If training of local personnel proved to be a major problem, managerial problems on the financial level also were extremely serious, as were high rates of turn-over among the expatriates. In 1976 the

World Bank pointed out that the agrobusinesses had been operating at substantial losses since their inception, that this was causing erosion of their share capital, that the asset structure of the agrobusinesses were very shaky, and that much of the time of top management was spent in finding new loans, leading to conservatism in research and development and experimentation on the ground. Indeed in 1977 this became such a problem that the agrobusinesses were taken over by the Government.

(iii) Mobilization and Labor Management

Analyses of labor management practices in countries like Iran are extremely rare. Aramco (Saudi Arabia) had major turnover problems until the 1950s, which were solved after the introduction of a screening test. But no public information is available on just what was done. The only available study suggests it was a problem in industrial discipline: one cannot expect pre-industrial peoples to have such discipline. Another possibility is that many of the initial trainees may have been pastoralists, who would work in certain seasons and leave to take care of their herds in other seasons. A third possibility is that Aramco eventually learned to hire a docile minority group: Shiites. It is clear that the oil industry and also other industries in these countries do not encourage the development of union activities. The Iranian and Bahrain governments expended much effort to institute paternalistic controls on a large labor force, which Nakhleh had analyzed for Bahrain: the failure to listen to

workers or allow any way of aggregating information from below means workers are caught between, in Lapidus' phrase, "between impotence and violence." Every labor strike becomes a political crisis: demands for better pay, conditions and benefits rapidly become joined to calls for freedom of speech, assembly, press, release of political prisoners, removal of expatriates and overthrow of the government. Analyses of paternalism in factories are available in one or two case studies developed by the Iran Center for Management Studies.

Analyses of labor relations in Khuzistan are only available in Goodell's study, where she contrasts the Shell-Cott operation with an Iranian run one. The Shell-Cott operation was run by British managers who believed in better wages as incentives, open competitive hiring (if you need a tractor driver, you post a notice and have all the contestants present for trial displays of their skill so all can see who is competent), negotiations over worker-interests as healthy devices to adjust labor relations, and maintain a relatively satisfied productive labor force. The Iranian run operation by contrast hired through friendship and patron networks, allowed no group negotiations over contracts, and as far as possible removed any possibility of autonomy from the workers. The Iranian management prided itself on having no strikes, but the price was a more discontented, less productive labor force. Such observations sound plausible but without production figures or other measures of success, they are hard to confirm.

(c) Large Scale Agrobusiness

Among the problems of the agrobusinesses were the large size, the mistaken assumption that economies of scale are similar in irrigated crops as in dry farming, the pressure to produce results so that inadequate land preparation was done (the asparagus crops had to be weeded by hand for several years, labor being supplied by village women and Kurdish refugees), some of the land was badly leveled, low water costs leading to over-watering, machinery maintenance problems both because of barriers of culture and financial problems.

The financial problems were connected to political and policy roots, if Goodell's account is correct that the agrobusinesses were essentially established not due to any entrepreneurial promise of profit, but as bribes to be allowed access to more lucrative operations in other parts of the economy:

> In exchange for these agrobusinesses, Iran has granted to foreign banks banking privileges in Teheran; to private foreign entrepreneurs, choice factory sites near the capital; to corporations like John Deere, the opportunity to break monopolies previously granted by the Shah to their competitors; to development corporations, contracts to develop whole provinces elsewhere in Iran... Shell International quite openly points to oil concessions as the sole motivation for its having launched the most progressive and professional of all the agrobusinesses (Ch. 18).

The investors included: Dow Chemical, Chase Manhattan, Shell Oil International, Trans-World Agricultural Development Corporation, Bank of America, Mitsui, Hawaiian Agronomics, First National City Bank.

Capital investment was about $4,000/ha., not including land or labor, and yet after five years, wheat returns were no better than

a traditional landlord, and only 25% better than traditional peasant agricultural techniques using commercial fertilizer. One agronomist made the following comparative estimates:

	1958 Peasant Agriculture (w/o tractor)	1976
amount of land fallow in summer	52,000 ha.	92,000 ha.
land in wheat	45,000 ha. (+ 16,000 in barley)	19,000 ha. (+ 5,000 beet)
land in rice (main summer crop)	11,000 ha.	---
gross value of agricultural produce (Rls million; Rls. 70 = $1)		
winter	440	1,070
summer	613	312
(adjusted for uncounted crops: asparagus, alfalfa; but not for sheep, cows, buffalo in traditional agriculture)	1,101	1,540

These figures if correct are quite eloquent: the decline in food crops in favor of export crops or no crops at all; the reduction of diversity of products and hence a reduction in mobility possibilities such as the shepherding route of Rahmatabad in the past; the making of agriculture extensive rather than intensive; high capitalization

with little return per unit of capital. The argument of some agronomists is that although another development strategy probably would have been better, now that the soil and watering structure has been altered, in another decade or so the DIP may yet work and the bugs be ironed out.

(d) State farms, farm corporations, and cooperatives.

(i) State farms: Haft Tepeh Sugar Plantation (10,000 ha.)

Ehlers (1975) argues that a state farm differs from the agrobusiness problems because since it is not built on a profit-seeking basis, it is not subject to the tendency to become a labor-minimizing, export-oriented enclave, with few fact-linkages to the domestic economy, and a proletarianizing effect of the labor force displaced into alienating-like ghettos (sharaks, new towns). Haft Tepeh at least employs many people: over 2000 permanently and 15,000 seasonally, and supports both a sugar refinery and a paper mill. Goodell finds this distinction between state farms and the agrobusinesses unconvincing. In any case the lack of proletarianization on the 2000-3000 workers is unlikely to be true.

(ii) Cooperatives

All participants in land reform were required to join cooperatives. The cooperatives were to provide agricultural credit and marketing services. Few worked effectively. A major problem was lack of state funds to provide the credit levels necessary (one

reason why Arsanjani resigned in 1963). In the later stages of land reform, it was envisioned that the inefficient small peasant holdings would be reaggregated in a fashion which would allow centralized production decisions and mechanized technology. Rising national food requirements meant that something had to be done about the 2.2 million tenant farmers who gained some 5-6 billion hectares of land through land reform, but who remained subsistence farmers with less than ten ha. units and marketing only 10 or 15% of their product. The solution to this was the farm corporation in part modeled on the Israeli moshav.

(iii) Farm Corporations

Villagers who owned land were given shares in a jointly run agricultural enterprise. The dangers of substituting government engineers and agronomists for previous landlords was perceived, but was felt to be an acceptable necessity in the service of making agriculture more productive. Few of the corporations worked well. There are reports that three such corporations in Khuzistan, composed of 27 reaggregated villages, were more successful than most. This information comes from a series of papers prepared by S. S. Johl for the FAO under the MANTIS Project in Dezful, but the papers are apparently available only in Tehran.

(e) The New Towns (Sharaks)

Thirteen resettlement centers (sharaks) were planned for the displaced peasants. Each was to have about 650 "housing units," each

unit being composed of four families. By 1976 five of these had been constructed, and three were occupied: Kavus, Khosrour, Sassan. 1180 families had been moved in, and 500 more were ready for resettlement. First priority went to those who had lost land and dwellings; second priority went to landless villagers who lost houses; landless laborers (as with land reform itself) got nothing. Payment for the new housing was required. No retraining programs were provided and minimal employment: 929 man/days for 1180 families. Theoretically they were supposed to be absorbed by the agrobusiness labor needs.

Again the only in depth study is Goodell's (1977): she describes a sharak with 2700 people which she calls "Byzun." The housing units look geometrically pleasing on the walls of the Tehran architects:

This pattern could not be changed by the inhabitants to fit their particular needs. Inhabitants were discouraged from entrepreneurship. One man applied to the authorities to open a shop; there was no answer for six months, so he opened a shop; the authorities came and closed the shop: he was destroying the clean aesthetic of the town plan by having a shop on the street. So shops, such as there were, operated out of back alleys and homes somewhat surreptitiously without official sanction. The inhabitants likewise were discouraged from

cooperation or communal organization. Residents were systematically separated so that they would not live next to former village-mates; this dislocated ritual and kinship organization as well. The people applied for permission to build neighborhood mosques and were told that they could have one mosque only, that they should collect the money and the state would build it for them. Health clinics, schools and a slaughter house which were supposed to be built by the state, were built but never opened for public use. Perhaps the most model example of the position of the inhabitants, and an illustration of the "oriental despotism paradox" (destruction of any political structure for individuals to use on the local level), was a wheat shortage. The inhabitants could not get flour for bread, and eventually marched on the secret police headquarters. The secret police said they had nothing to do with wheat, the people should go to the Ministry of Agriculture; the people replied, they had tried that without success, and they know that SAVAK has power. The secret police said they would see what they could do, but first the people would have to disperse: human beings should not herd like animals. A peasant in the back retorted that animals in herds do not usually starve. Wheat was found. "Caught between impotence and violence."

Apparently even the Iranian bureaucracy referred to the sharaks as labor centers. There are a few interesting complications in Goodell's essentially angry and negative account. Once in these sharaks, people seemed to be partially subsidized, did not accept the lowest level jobs, and often refused to move into the cities. The

sharak in addition to being a center for a reserve labor force, was apparently a welfare drain. Figures on the financial and social flows are not available.

Human Rights Summary

The DIP is a complex case from a human rights perspective because the problem is one of class rather than ethnicity or religion. Regardless of language or ethnic group, it was the peasant farmers of Khuzistan who suffered most from the project and national elites or international corporations which benefitted most. The area is one of ethnic and linguistic diversity, involving urban, rural and nomadic Persian-speakers, Arabic-speakers, and Turkish-speakers. The project area itself seems to have involved primarily Persian-speaking villages and a few Arabic-speaking ones.

It would be of interest, if one had a list of subcontractors, to determine if there was any skewing of work and profits toward one group rather than another. One suspects, however, that there would not be the skewing of the sort that was prevalent in the late nineteenth century and early twentieth century, when European firms preferentially hired religious minorities. D&R at the beginning tried to get a list of all qualified engineering firms, but further information is available, if at all, only in the Andimeshk headquarters files, as is information on how much of the contracting given to international firms might have been handled by local firms -- an issue of dispute between the World Bank and the Government of Iran on the Qazvin Project.

QAZVIN

National Government Goals

Economic: reconstruction of an earthquake destroyed area; increased standard of living for farmers; industrial growth pole

Political: decrease the pressure on Teheran by diverting industry from Teheran to areas at least 90 miles away.

Funding: Government of Iran, World Bank

Ethnic Groups: Project area: primarily Persian speakers

Region: Persian and Turkish speakers

Accomplishments: increased productivity, mechanization although original goals not reached. (e.g., the estimated rate of return of 10% on capital was not reached: 0%). farmers income doubled, but productivity was only 25%.

Implementation: one of the first serious experiments with guidance of production strategies and objections on the grounds that dictatorship of the landlord was being replaced by dictatorship of the bureaucrat; the industrial expansion (not originally envisioned when the agricultural project was designed) prevented some of the Khuzistan type problems: specifically, labor was absorbed into industry and there were labor shortages in both agriculture and industry causing Qazvin to become a pole of labor attraction.

Anthropological contributions: training of the farmers was crucial to the success of the project, something that eventually the World Bank conceded that the Israelis had tried to foster in a climate of indifference by the Government of Iran and the World Bank. The Israelis brought in both anthropologists and sociologists, although most of their work was simple census monitoring. An American sociologist also has written a dissertation on the Qazvin bazaar lending some insight especially into the marketing end of the agricultural system.

Less documentation is available for the Qazvin Development Project than for Khuzistan, but the case is interesting because here the development of an industrial park had the effect of avoiding the proletarianization effect of pushing people off the land as in Khuzistan.

In 1962 Qazvin suffered an earthquake which not only destroyed villages but dislocated the underground canals which provided irrigation (qanats). An Israeli consulting firm (TAHAL) was hired to coordinate relief and draw up a development plan which they received partial World Bank funding. The plan called for a two phase development: first an irrigation reconstruction involving deep wells and local surface water drainage systems as well as the introduction of machinery and extension workers. The second phase (in which the World Bank declined to participate) was a large scale diversion of

waters of the Taleghan River to the mountainous north onto the Qazvin Plain. TAHAL was involved in all phases of the project until 1969 when they remained only in an advisory capacity, and in 1972 their contract was not renewed (against World Bank advice). In the period 1970-76 one hundred forty industrial plants were erected in a thousand hectare industrial park on the outskirts of Qazvin. While in 1974 there was still some rural unemployment, by 1976 there were 70,000 industrial workers, of which 22,000 had to be imported from outside the Qazvin area, and trucks were sent to villages forty-five miles away to find labor. Indeed there was some tendency to rent out one's farm and go to the city, but this was limited by the mechanization of labor and the relatively high returns on rural labor.

This fortuitous and not entirely planned interaction between agricultural and industrial development helped mitigate the effects of many of the problems which Qazvin shared with Khuzistan:

(a) disagreements over strategy and organization.

The World Bank and the Government of Iran disagreed over costs of consultants, procurement procedures, the degree of autonomy of the project and the financing. Of these the two most significant were the rejection of the Iranian authorities of the notion of a unified project management (as in Khuzistan), and the Bank's requirement for international competitive bidding for civil works as opposed to Iran's desire to give contracts to local tenders. (Iran also wanted retroactive financing, since it took six years from the time of first

request to the dispersal of first funds from the World Bank.) In this case, had smaller scale technology been introduced as the World Bank wished, the industrial development would have drawn the agricultural labor force away from the fields, and food production would have declined.

(b) inadequate training of farmers so that they could be the decision makers.

Rotblat cites a report internal to the Project fairly early on which cited farmers' displeasure at being treated as laborers, directed by Tehran engineers and bureaucrats in all decisions. Indeed for orchard crops, the Project administrators kept the farmers entirely off the premises. Also the poultry center was entirely automated and run without the farmers' participation. At least one village (Ajorband) had the nerve to withdraw from the Project. The World Bank finally recognized that TAHAL had a genuine concern for training farmers which was not supported by either the Government of Iran nor the Bank.

(c) changes in government policy, and decay in financing

In 1968 the Government decided to maintain under private ownership existing wells that originally were supposed to be transferred to the Project, and thus deprived the Project of 14% of the total supply of water. Other sources of water had been over-estimated seriously affecting the completion of Phase I.

Funding for extension services declined, while funding for technical innovations which did not require farmer participation were kept up.

In sum, while the World Bank was sorry to see TABAL leave, adn wished that the Government of Iran had been less concerned with production and more concerned with the welfare of the local people, it is clear that a similar Iranian Government dynamic was operative here as in Khuzistan: the oriental despotism paradox.

ECONOMIC DEVELOPMENT AND ETHNIC MINORITIES IN THE SUDAN

B. Pajaczkowski and W. R. Huntington

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Qataghan

Purposes of national government:

Economic: increasing food and cotton production

Political: settling dissident Pashtun tribesmen from south of the Hindu Kush, and using them as a basis of control

Funding: Afghan capitalists via Bank Melli. Afghan provided funding for the Spinzar Cotton Company (a monopoly), supported by the provincial governor using corvee labor to drain swamps and dig irrigation canals.

Ethnic groups: Uzbeks - original lowland settlers (irrigated agriculture and pastoralism)

Tajiks - conquered highlanders (19th century) - mixed unirrigated agriculture and pastoralism

Arabs - late 19th century immigrants from Russian Central Asia; nomads who moved into an unoccupied ecological niche

Pashtuns - immigrants into expanding "frontier" of reclaimed swampland; became dominant group

Role of anthropologists: none, unlikely to have been needed in any case.

Historical Background

Northeastern Afghanistan has traditionally been divided between the lowland river valleys of Qataghan and the highlands of Badakhshan. Geographically Qataghan encompassed the Kunduz, Khanabad, and Amu River Valleys as these rivers leave the mountains for the loess plains where they formed vast swamps. The area was inhabited mostly by Uzbek tribesmen who dominated both the plains andthe bordering mountain valleys as a result of conquests on the late 18th and early 19th centuries. Qataghan was a highly productive province. The British reported that, "As for grain its production is limited by its being all but unsaleable... There is probably no country on earth where life can be supported better or cheaper. Though money is scarce there is no absolute poverty" (Burnes et. al., 1839: 131). The major drawback to increased settlement however was endemic malaria. The Uzbek ruler of Qataghan attempted to develop the province by transferring the Tajik population from their mountain homes to the swamps of the plains. This attempt ended in failure. "The aggregate of foreigners thus forcibly transplanted in these unhealthy marshes from that year [1830] to the present time is estimated by the Uzbeks at 25,000 families, or in round numbers 100,000 souls. I question whether 6,000 of these were alive in 1838 so great had been the mortality in the space of eight years" (Wood, 1872: 258). The Uzbek ruler felt that "because he lives in [Kunduz], he sees no reason why the peoples of

the hills should not also live there also. I ventured to suggest that a reason might be that they invariably died..." (Burnes et. al., 1839: 121). This failure led to an Afghan proverb, "If you want to die, go to Kunduz." It would be 100 years before an attempt would be made to develop Qataghan.

Traditionally Afghanistan was the Kingdom of the Afghan or Pashtun people centered on the areas between Kabul, Kandahar, Peshawar, and Quetta (Elphinstone, 1815). The size of Afghanistan varied through time, but by 1859 the Afghans controlled the Turkestan plain north of the Hindu Kush and Badakhshan by virtue of conquest. The boundaries were fixed in the late 19th century when Britain and Russia agreed that Afghanistan should be a buffer between their respective colonial empires. By this agreement Afghanistan lost territory it had traditionally held in the south that was the home of many Pashtun tribes. This land became the famous Northwest Frontier of British India. The land they got north of the Hindu Kush by conquest was confirmed by international treaty (Kakar, 1971).

During the rule of Amir Abdur Rahman (1880-1900) this diverse territory was brought firmly under the control of the Kabul government. Abdur Rahman had grown up in the north and recognized it as Afghanistan's most valuable territory. Because of warfare in the 19th century the region was only sparsely populated. Abdur Rahman therefore drew up a plan to develop the north by encouraging emigration from the south of Hindu Kush into the northern plains. His purpose was twofold. Economically he hoped to relieve the population pressure on the less

productive south by moving people into a more productive area where they could produce food surpluses. Secondly Abdur Rahman wanted to integrate the alien Turkish population of the north into the Afghan state by flooding the region with Pashtun tribesmen. He found that tribes in the south who rebelled made loyal subjects when transported to the north where they identified themselves with the Kabul government against the Turks and Tajiks (Tapper 1973, Kakar 1979, Gregorian 1969).

Abdur Rahman's plan worked well for the Turkistan plain but his attempts to settle Qataghan failed - people refused to live in a malarial region. The exception to this general fear of Qataghan was made by nomadic tribes. The majority of these were Arabs from Russian Central Asia who arrived in the 1870s and a minority of Pashtun nomads who arrived twenty years later. Nomadic groups used the valleys in fall and winter when malaria was less of a problem and moved to the steppes and mountains for the spring and summer. The fine pastures of the region allowed them to raise large flocks of sheep. In 1921 they received legal title to the land they used when the province was reorganized by the central government (Barfield 1978a, Kuskeki 1923).

Development of Qataghan

The development of Qataghan was one of the most successful projects in recent Afghan history, yet it has rarely been cited in the literature on Afghan development (except for Etienne 1972). One reason Qataghan is ignored by foreign analysts is that it was

developed by the Afghans with their own capital before the country became addicted to foreign aid. In the early 1950s when foreign aid first began to flow into the country, Qataghan was reaching the climax of its land reclamation. This improved state of affairs was unwittingly taken as a baseline by foreign experts who made proposals for bringing more marginal land into production. They failed to realize just how great a change had occurred in the region in the twenty years before they arrived because Qataghan did not look developed. Except for the cotton ginning plants, Qataghan looked like "timeless" Asia. Villages were constructed along traditional lines, irrigation ditches and canals ran along the natural contours of the land fed by barrages that diverted river water into them. Traditional technology had transformed the region, but without mechanical pumps, concrete irrigation dams, or elaborate bureaucratic controls the development of the province went little noticed.

The "hidden" development was due in large part to the constraints placed upon the developers by the generally depressed state of the world economy in the 1930s. This case then is particularly revealing in pointing out the importance of local initiatives, creating institutions with roots in the region, and spreading the benefit of development throughout the population. Since Afghanistan has received one of the highest levels of technical assistance of any country in the world (Fry 1972: 68-70), it is important to compare this project which the Afghans financed, constructed and ran themselves with the later foreign dominated development projects.

Development of Qataghan began in the early 1930s with the fruitful partnership of three men, all of whom envisioned Qataghan as a tremendous investment opportunity. Abdul Aziz Londoni pioneered the cotton industry in Afghanistan. As early as 1925 he had arranged to grow cotton for sale to the Soviets knowing that Qataghan was ecologically similar to Uzbekistan which supplied most of the cotton used in Russia. His vision was shared by Abdul Majid Zabuli, who established the first bank in Afghanistan in 1930. The Bank Melli Afghan was given a monopoly on the import of sugar, petrol and vehicles, together with export monopolies on cotton, karakul and wool. Both private investors and the government owned stock in the bank. Zabuli backed Londoni's venture in cotton, providing capital to purchase machinery and to reclaim land. The third participant was Shir Khan, governor of Qataghan, who backed the venture and put the power of local government behind it. Thousands of acres were reclaimed, some with corvee labor, and made available to farmers on liberal terms. Some of the investment came from wealthy Kabulis who were forced to buy land by Nadir Shah, the new King of Afghanistan who used the revenue to build up the treasury. The cooperation of these men and the thousands of new settlers transformed Qataghan into the most productive part of the country in less than twenty years, with cotton, rice and sugar beet exports. Upon Londoni's death Shir Khan became president of the cotton company, later called Spinzar (Fry 1974: 83-89, Dupree 1973: 471-474, Etienne 1972: 80-83, Jarring 1937).

The economic development of Qataghan quickly made it Afghanistan's largest producer of rice and cotton. Exports of these products to the Soviet Union was made easy by the proximity of Russian railheads on the Amu Darya, and to Kabul by a motorable road through the Hindu Kush. Attracted by cheap land and decreasing problems with malaria as the swamps were reclaimed, settlers poured into Qataghan. Two major sources of population were Turkic refugees fleeing Stalinist Russia and Pashtuns from south of the Hindu Kush. Malaria was eradicated in Qataghan in the early 1950s by the United Nations in cooperation with the local administration. Compared with figures from the 1920s lowland Qataghan's population had tripled by 1965 while population in the mountains remained static (Grötzback 1972: 300).

The pattern of settlement showed an increased emphasis on Pashtun immigration into the project areas as time went on. The reclamation began in Khanabad and Kunduz in the 1930s and spread to Pul-i-Khumri and Baghlan in the 1940s. The following breakdown of ethnic groups gives these results:

Percentage of Population

	Pashtun	Tajik	Uzbek	Turkoman	Hazara
Baghlan area	56	30	10	2	-
Pul-i-Khumri area	61	14	14	5	6
Kunduz area	41	43	13	2	1
Khanabad area	45	36	6	3	10
Taloqan area	10	10	60	1	10

Source Etienne 1972: 84

The most striking pattern about this chart is that the percentage of Pashtuns is highest were development occurred the latest. Thus Taloqan, which did not benefit from the project, kept its Uzbek majority, whereas elsewhere Uzbeks became small minorities in the land they once dominated. Pashtuns became a significant minority in Kunduz and Khanabad but not a majority. This reflects the freer land sales and distributions of the early reclamation period when skilled farmers, regardless of ethnic group were in great demand. The success of the initial project fueled the fears of the Kabul government about development in a non-Pashtun area. Their response was to increase Pashtun immigration in Baghlan and Pul-i-Khumri to create a Pashtun majority. The government followed Abdur Rahman's policy of transporting disloyal elements from the south to Qataghan where they became loyal supporters of the government through self interest. As recently as 1947 large groups of rebellious Pashtuns were moved into developing areas. Other ethnic groups resented the governments' policy of favoring Pashtuns and felt that the government took more from Qataghan than it gave. Although softened by the region's prosperity, other ethnic groups do feel that Pashtun domination of provincial government is oppressive.

Qataghan today is the most productive region in Afghanistan. The land area in production today encompasses approximately just under 175,000 ha. irrigated land and approximately 60,000 ha. of unirrigated cropland, divided among the following crops:

Irrigated land	Area in ha.
Wheat	62,800
Barley	10,000
Rice	44,700
Cotton	24,400
Sugar beets	4,500
Other	27,100

Unirrigated (subject to great variation)

Wheat	57,300
Barley	22,700

Source Etienne 1972: 84

The continued development of Qataghan has largely been in the hands of the region's monopoly cotton company, Spinzar. Formed by the private investors in the 1930s, it was initially controlled by the Bank Melli Afghan with some government participation. In 1953 the government took 51% control of the company under the regime of Prime Minister Daud who was in favor of state-controlled development (Fry 1974: 88-89). Daud took full control of the company in 1973 when he became the president of the new Republic of Afghanistan.

Spinzar has a monopoly on cotton processing in Qataghan. It fixes both the price at which cotton will be bought and grades it. An unfortunate aspect of this monopoly power was the common practice of undervaluing cotton in relation to wheat, its competitor for

cropland. In the 1960s cotton production declined steadily until the government was forced to demand that farmers put 25% of their cropland in cotton (Etienne 1972: 126). This situation only improved in the 1970s when Spinzar agreed to set more realistic prices. On the positive side Spinzar has made short term credit available to farmers against the next harvest. This has enabled farmers to use chemical fertilizers on a regular basis. In an area where credit is available from private lenders only at usurious rates of interest, and where banks refuse to lend, Spinzar's short term interest free loans have been an important contribution to provincial growth. Spinzar has also been instrumental in pushing new agricultural techniques to raise productivity from which it directly benefits.

Unlike other Afghan industries, Spinzar has its roots in Qataghan, not in Kabul. Spinzar officials are locally recruited and employees spend their life in Qataghan. Unlike government officials, who constantly scheme to be transferred to Kabul, Spinzar officials have strong roots in Qataghan, often going back three generations. Additionally in Qataghan Spinzar overshadows the government in numbers of employees, who are better paid and housed than government workers. This has led to a form of paternalism that leads to conflicts, but has the advantage of creating a company whose self interest pushes Qataghan's continued development (Barfield 1978a).

The agricultural development of Qataghan had a direct and beneficial impact on the nomadic pastoralists of the region. Since these older inhabitants of Qataghan had received title to village land

and certain pastures, they saw the value of their holdings rise. More importantly cotton growing could be integrated with sheep raising. The annual nomadic migration takes sheep out of the agricultural lowlands in spring and summer when crops are growing, and takes them into the steppes and mountains where seasonal pasture is available. In the fall and winter sheep graze on the fallow fields. Nomads also take advantage of the cotton crop by purchasing pressed cotton seed and seed hulls to use as winter fodder. There are approximately a million sheep in Qataghan, a quarter of which are the famed Karakul sheep that produce lambskins for export. The government's policy of encouraging Pashtun immigration has made the Pashtuns the dominant majority group of nomads. Most nomads live in permanent winter villages which they seasonally abandon. Many have become landowners. The success of making animal raising compatible with agricultural development is the result of nomads adapting their traditional migratory patterns to a changing economy. No attempt was made in the region to settle nomads, and the semi-nomadism of villages and good pastures made them a valuable part of the regional economy (Barfield 1978b).

Summary Conclusions

From the description above it may be argued that Qataghan was not a "development project" at all because it lacked any explicit plan. This objection is however superficial - the development cf the region would not have taken place without intensive land reclamation,

irrigation facilities, and capital investment. All of these elements were the result of planning, but planning that realistically evaluated local potential and resources. Qataghan was chosen by the first Afghan capitalists as the area that would provide the largest return on their investment. In a country where capital was scarce this was a highly efficient way to allocate resources. Because of the world depression in the 1930s the partners in the development used traditional technology and local labor for the work. The demand for new farmers encouraged the developers to work in cooperation with the farmers to make the project work. One advantage of using traditional technology was that when the irrigation system was complete it was maintained by the villagers who used it. Most importantly settlers came into the project area after hearing of its success. The complete development of the region took twenty years because new areas were added to already functioning ones. The planners put in only what was necessary to make the project move into a self-sustaining phase. In the 1930s the national government ruled a totally undeveloped country. It had neither an ideology nor a national plan. This allowed Qataghan to develop without restraint in its initial phase. As such Qataghan represents an important example of development from the bottom up before the introduction of international development projects came to Afghanistan.

Helmand Valley Development

Purposes of national government

Economic: increase productivity and open new lands

Political: provide economic returns for the politically dominant Pashtuns; settle nomadic tribes who crossed the Pakistan border; create a national peasant group by mixing ethnic settlers.

Funding: initially Afghan government money for hire of American contractors, later major American foreign aid loans and grants.

Ethnic groups: Pashtuns, Uzbeks, small number of other minorities.

Accomplishments: Some productivity increase, but not proportional to capital investment; much land ruined in the process; many settlers left; used as a classic example of developmental failure in Near East.

Implementation: poor at all levels; lack of Afghan staff; failure to survey; failure to provide farmer training; technical failures to provide proper drainage.

Role of anthropology: none at start, could have predicted and avoided many basic misunderstandings.

Background

The successful development of Qataghan, even in its initial stages, encouraged the Afghan government to look at the potential of other areas of the country. They focused largely on the Helmand region of southwestern Afghanistan. The Helmand River and its tributaries flow out of the Hindu Kush mountains and into the desert areas of Seistan. The river is landlocked terminating in a series of swamps that straddle the Afghan-Iranian border. Forty percent of all the country's water resources flow through this system. The area is

dotted with ancient cities and ruined canals, evidence of a more prosperous time when Seistan and the Helmand River valley were the centers of great empires and a great grain producer during the Middle Ages. But in modern times the river flowed through deserts used only by small farming villages. The reason for this decline has never been satisfactorily explained. Theories expounded range from the destruction of the region by warfare in Timurid times to a geological shift which tilted the land and made traditional irrigation systems unworkable. Today the land itself is poor, affected by sand and alkaloid deposits, and subject to erosion. Had an intensive archeological survey been done it might have been possible to clear up this mystery: Did the region thrive despite its drawbacks until militarily destroyed, or more critically did an intensive agriculture or a geological change centuries ago produce a wasteland that had no productive future?

Modern development in the Helmand region began fitfully in 1910 with the opening of some old irrigation networks that were cleaned out and brought into production. A more ambitious, but still small, project began in the 1930s (Michel 1959: 141-149, Etienne 1972: 183-4). From the beginning political considerations predominated over economic factors. The Kabul government viewed the development of northern Afghanistan as a mixed blessing. It was encouraged by the economic growth of the region, but did not like the fact that the development was occurring in a non-Pashtun region. The government was in the sole hands of the Pashtuns and they were determined to maintain their economic and political superiority vis-a-vis other ethnic groups in the

country. For this reason the government wished to balance the growth of the north by creating a new development project in the southwest and by encouraging Pashtun immigration to the north. The Helmand region, with its water resources and past productive history, was a logical place to begin. It had an added political advantage by the fact that it was the homeland of the Durrani Pashtuns, the tribe from which the monarchy and political elite of Kabul originated. These political factors overrode the economic objections that the Helmand region might be unsuitable for a large scale project (Etienne 1972: 141, Franck 1955:36).

The initial construction projects of the 1930s followed the old irrigation networks as a guide, attempting to recreate the ancient system. The work was planned and supervised with the help of German and Japanese technical assistance. Before any results could be obtained, the Second World War intervened. The Allies forced all Axis nationals to leave the country and the war soon halted equipment imports to Afghanistan. Afghanistan was however still in a position to export and by the time the war ended had accumulated a large hard currency surplus. The Kabul government planned to use this money to pay for the development of the Helmand region (Dupree 1973: 478-81).

The Project

In 1945 negotiations began between the Afghan government and Morrison-Knudson Afghanistan, Inc. (MKA), an American firm experienced in large scale projects. MKA estimated the total cost of the project

at $63.7 million, mostly in hard currency. Of this $10.7 million was budgeted for surveys and roads needed for the construction of two dams and an extensive canal system. In order to save foreign exchange the Afghans agreed to undertake parts of the project themselves such as constructing the drainage system. In addition they forced the cancellation of the surveys MKA felt were necessary because of the expense (Dupree 1973: 483).

The project itself was on a grant scale. The plan called for irrigation of 380,000 hectares of cultivated land to be settled by 700,000 nomads. In this way the government hoped to increase productivity and put an end to the transnational migration of the nomads who used the region seasonally (Etienne 1972: 142, Michel 1959: 237).

The desirability of such a project that would involve such a large part of the country and consume so much of Aghanistan's development effort was doubted by many outside observers. The United Nations mission in Afghanistan refused to become involved because:

> UN headquarters entertained doubts about the economic soundness of the projects proposed and the government's administrative capacity to complete them. Moreover, the economist of the first operational mission reported opposition from officials of the Afghan Department of Agriculture, whose advice was not sought by those blueprinting the development of the Valley. It also seemed to him that the officials assuming the responsibility attached too much weight to engineering feasibility and too little to economic and social usefulness. The government appeared swayed more by national pride in selecting the Helmand area for irrigation on a grandiose scale. In contrast the UN economist considered the area in the north (Oxus Valley) much more promising

> because ample rich land there could be turned into profitable cultivation at far less cost than in the Helmand Valley (Franck: 1955: 36-37)

Other objections included the government's lack of financial resources to complete such a project, the failure to plan and budget for secondary developments to complement the irrigation works or to provide the necessary processing plants to handle the new crops. For these reasons the United Nations refused to take part because they felt the Afghans would blame them, rather than the inherent defects in the project, when it failed. Such a suspicion was more than justified by later events.

Even within the Afghan government there were critics of the policy. Adul Majid Zabuli, Director of the National Economy (and major force in the development of the north), opposed the plan from its inception. Ironically he was dismissed from his post in 1950 for foreign exchange losses incurred by the Helmand project. Once the project got started continued funding was based largely on the principle that a lot of money had been already invested. In spite of admitted low returns money was continually poured into it with no expectation of future returns (Fry 1975: 201).

Problems plagued the project from its start. The costs began to explode and by 1949 the Afghan government's reserve had been eaten up. The Afghans then turned to the American government for a loan of $55 million. The Americans demanded the project be reorganized and finally approved a $22 million loan (Franck 1953). When money ran short MKA dropped a number of projects including ground-water surveys, road paving and hydro-electric projects, and completed the

two dams and Bogara Canal system in 1951. At this point the Afghans admitted they would be unable to carry out their part of the construction and asked MKA to take over the engineering responsibility. The Afghans appealed to the United States for aid (Michel 1955: 148-165). In the cold war atmosphere of the day the failure of the Afghan government and their private American contractor was interpreted as a loss of prestige for an "American" project in Afghanistan fueled by fears of Soviet aid there. While difficult to understand in retrospect the United States took responsibility for what even at the time was regarded as a developmental white elephant (Franck 1960, Kamrany 1969).

Social Factors Misjudged

The Helmand Valley Development project was envisioned by the Afghans as a way to solve a number of social problems. First among these was the settlement of a large body of Pashtun nomads who migrated annually from Afghanistan to Pakistan with their flocks of sheep. Largely for political reasons, the Afghans wished to stop this transnational migration and settle the nomads in Afghanistan where they could be more easily controlled and taxed. The government made the assumption that nomads moved because they were too poor to stay in one place and therefore would be eager to settle and receive the benefits of sedentary life. Other settlers would be drawn from the ranks of landless sharecroppers.

In fact the government's assumptions were based on stereotypes about nomadic life that had little empirical foundation. The Pashtun

nomads were not just some poor group of homogeneous wanderers. Rather they included wealthy landowners, nomadic traders, and many other subsistence oriented nomads for whom sedentarization would represent a drop in their standard of living (Ferdinand 1962, 1969). The advantages of sedentary life in terms of schools or medical facilities were more promise than real - none of the many villages the nomads passed through had any. Finally some of the Pashtun nomads already owned land in Pakistan. The government's mistake was based on the ignorance of Afghan government officials, most of whom had no contact with or understanding of nomads. They were not helped by western "experts" who were strong believers that nomads should be settled - and who pushed that advice both in Iran and Afghanistan. The value of the nomads' sheep and their ability to use the extensive seasonsal grassland in Afghanistan was not considered. A closer analysis of nomadism in Qatagnan would have revealed that a form of semi-nomadism that combined agriculture and pastoralism would have been a more realistic aim, for the assumption of the Helmand planners was that the nomads could be transformed into farmers with no training. The process in the north showed that it might take a generation of land owning before nomads became skilled farmers. Yet in the Helmand region the plan called for the nomads to take up irrigated agriculture in an area where even the most experienced farmers would face difficulties. The nomads were expected to move from animal raising into intensive agriculture on a few months' notice. If settling nomads were a priority, no more unlikely a plan could have been devised.

Once the major dams and canals were put in place in the mid-1950s the problems of implementing social and economic parts of the project began. The project area could be dissected into two classes. Old villages that had been long settled in the valley which would receive an increased and more dependable supply of water, and those areas being brought into production for the first time which would be the sites on which new villages for the nomadic settlers would be built. Land in cultivation before the project was estimated at 77,000 hectares, and after the project amounted to approximately 145,000 hectares. The land already in production represented the best land of the region and amounted to one half of the entire project area (Etienne 1972: 144). Despite the importance of these settled areas, little or no attention was given to the problems of integrating them into the new regional structure. As a result, many technical innovations, such as land leveling, were made impossible by local opposition to altering the traditional land holding structures. Programs explaining possible benefits of improvements were not provided and since an individual farmer could not be sure how innovations would affect his land, agreements could not be made (Dupree 1973: 501).

The new dependable source of water allowed land in the old villages to be double cropped. The annual economic production of the region - new and old land - expanded in constant dollars from four million before the project to 15.6 million. This was a great increase for the region, but disappointing return for the $120 million spent (Etienne 1972: 144). In the old village area this increase went

largely into the pockets of large landlords who had controlled large tracts of land before the project began. Most of the increase of population in the old villages was the result of large landlords taking on new sharecroppers (Dupree 1973: 503).

The increased water supply also brought new problems to the old villages. They had always been short of water, so when they suddenly received a year round supply they followed a policy of "the more the better." The land, lacking proper drainage, soon became waterlogged. Production in many areas soon dropped by more than one half. Higher water tables also brought new problems with weeds, while soil fertility suffered as silt that used to come to the fields was trapped behind the dams. Attempts to come to grips with these problems were hindered by the lack of an effective education program and the small number of agricultural extension workers. The assumption had been that since the old villagers were experienced irrigation farmers, no new program was necessary. The new irrigation scheme was qualitatively different from the traditional agriculture practiced in the region. Unfortunately farmers had to learn the hard way that too much water could be more dangerous than too little (Dupree 1973: 501).

The new villages faced even greater problems. The first area to be settled was Nad-i Ali in 1954. The land had not been surveyed before settlement because it was deemed too expensive. Not until farming began was it discovered that an impermeable rock layer was sitting from four feet to only a few inches below the surface. When ploughed the thin layer of soil eroded, while other areas were poisoned by salt moving up through the soil (Etienne 1972: 161-62, Dupree).

The settlement of the new villages encountered social problems. The first group of 2,500 families came from different ethnic groups. They soon split along Pashtun/non-Pashtun lines. Any kind of community action was thus impossible. Within two years one half of the population had deserted Nad-i-Ali. By 1965 only about 1,000 families still lived in the area, and most of these were landless immigrants who took over after mass exodus of the initial settlers (Dupree 1973: 503-04).

Later settlements in Marja were more successful, having been surveyed, and villages settled according to ethnic group. Marja was new land, but new settlements in Shamalan and Darweshan put new villages in an area already partially occupied. Problems about water rights and land ownership quickly arose and were never satisfactorily settled, thus stopping the full planned development in this area.

After this rather rocky experience, the Afghans and the Americans put the blame on each other. The productive capacity of the region had been increased but given the return on the land and the continuing problems as a whole the project could hardly be judged a success (Tudor Engineering Report 1956).

Comparison

The success of Qataghan and the failure of Helmand projects make an instructive comparison. The size of the areas was about equal and the government was the same for both. The key to understanding the differences lies in five areas. First was economic productivity. The expected return on Qataghan's development was great and became an

attractive lure to further investment. In the Helmand region the expected return of the project was always in doubt and in the end proved disappointing. Second Qataghan's development by necessity used a technology that was understood and could be maintained locally. Traditionally organized canal cleaning, water masters, and local custom allowed the system to function easily in the absence of engineers and government officials. The Helmand project is an example of planning without regard for the actual social and technical skills available. Such a grand project could use none of the traditional organization to maintain the new facilities, but the Afghan government lacked the trained manpower to staff the new system. Third, settlers in Qataghan came as related groups and built their villages however they pleased. In Qataghan new settlers had a large stake in the project and were highly motivated. In Helmand the government's desire to settle nomads and mix ethnic groups put far too much of a burden on the project to do too many things at once. In the Helmand new settlers got poor land because old landlords already controlled the best pieces, whereas in Qataghan choice land was made available to newcomers. Finally in Qataghan the Afghans were motivated to look to themselves to find answers while in the Helmand they looked to more foreign aid or experts as a solution. Helmand addicted the Afghans to high levels of foreign aid that flowed through Kabul and made it unnecessary to build local initiative in the Seistan region.

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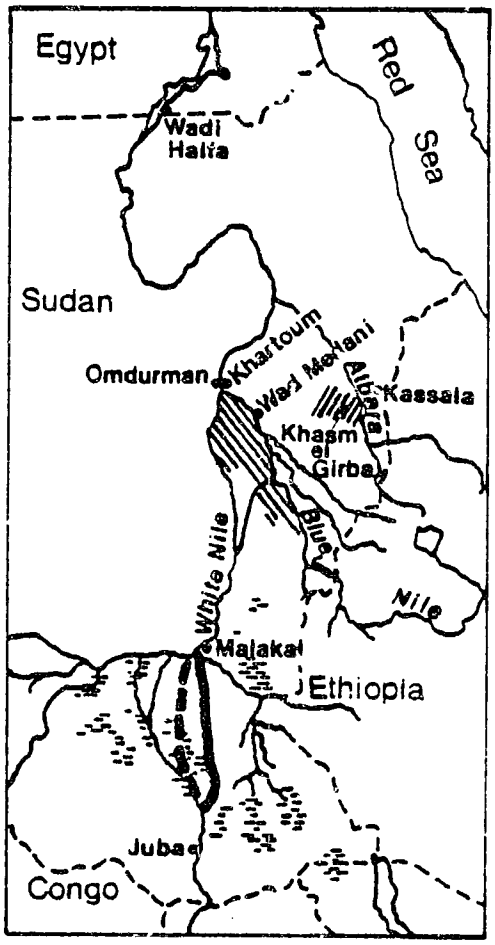
DEVELOPMENT IN THE SUDAN AREA



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Gezira scheme

Khasm el Girba scheme

proposed Jonglei canal

adopted Jonglei canal

Source: R.J. Church, AFRICA AND THE ISLANDS

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The three Sudanese development schemes reviewed here illustrate some of the social problems which occur in the transition from economic planning to the experiences of tenants and farmers involved; in each case we recognize that tension between ethnic groups has its basis in economic factors as much as in cultural differences. The three schemes also illustrate the changes occurring in the nature of Sudanese development in the last four decades: in the Gezira scheme, profitability was clearly ranked above social equity, with serious consequences for both. The problems at Khasm el Girba demonstrate the difficulties involved in the resettlement of cultivators and the sedentarization of nomads. The projected Jonglei canal, most recent and perhaps the most ambitious of the schemes described in this report, will have important effects on the fragile relations between the Northern and Southern Sudan, particularly if the interests of the local Southern population are not considered throughout the process of implementation. This report will show how the social impact of development has become increasingly significant as a factor in planning, with beneficial results. In contrast to the Brazilian, Iranian and Afghani case studies, the Sudanese case encourages an attitude of cautious optimism. In the last analysis, however, the effect of economic development on human rights remains embedded in the priorities which underlie development itself: achieving targets for export production in no way assures local populations of a better, more equitable future. It is to be hoped that the Sudanese government will continue its commitments to

assist the peoples of the long-neglected South, and in bringing improvements in health, diet, and education to all Sudanese in tandem with increasing agricultural output.

I. Introduction - Geographical and Historical Survey

Geography and Rainfall

The Sudan is a vast country, sparsely populated in large areas, but with high concentrations along the rivers of the Nile basin. With a surface area of 967,500 sq. miles (2,506,000 sq. km.), it is the largest state in Africa, and almost equal in area to the size of Western Europe. However the bulk of its population (12.4 million in 1973) live in concentrated rural settlements along the White and Blue Niles, and their tributaries. Some relatively isolated tribal populations exist in the Red Sea province (Beja and Hadendowa) and in the Nuba highlands. However the largest group of minorities, one quarter of the Sudanese population, and a quarter of its surface area, lie in the Southern region comprised by the provinces of Upper Nile, Bahr el Ghazal, and Equatoria.

The Nile Valley lies in a vast, downwarped clay plain which abuts upon the Ethiopian highlands and stretches as far as the border with Chad. Within this plain, rivers generally overflow their banks when they are swelled by rain; below 10° N the plain becomes a swamp, known as the sudd: permanent marshes exist around the courses of main rivers. North of the capital, Khartoum, much of the country desert

or semi-desert, with cultivation limited to the area immediately adjacent to the Nile itself. Thus with the exception of the coastal highland littoral of Red Sea province, where Port Sudan is located, almost all of the Sudan depends upon the Nile and its tributaries for crop lands and until recently for transportation. Mean annual rainfall ranges from an equatorial 2,400 mm along the border with Uganda to below 25 mm in the far Northwest. However between 6° N and 20° N rainfall is seasonal, and the year divided into wet and dry seasons. All vegetation is thus tropohilous - adapted to the probability of a period of drought, with longer growing periods in the south marking a change from sub-desert steppe, to grass steppe (short and long varieties) and in the far south, woodland savanna.

Settlement and Agriculture

While the metropolitan area of Khartoum-Omdurman has a population close to one million, the remainder of the Sudanese population by and large live in clustered rural settlements and subsist on agriculture. The prime cash crop is cotton, notably in the Gezira scheme; wheat, barley, maize, groundnuts and in the north, dates, are also grown in irrigated areas. The staple food crop is dura (sorghum) throughout the country. It should be noted that cultivation (whether irrigated or rainfed) often coexists with pastoralism; among the tribal populations of the sudd, in particular, livestock have a high cultural value and herd size is considered a mark of prestige.

Outside of the irrigated river areas, the main area of rain cultivation lies between 10 1/2° N and 15° N. This belt of land, stretching from western Darfur to Kassala, is characterized by systems of land rotation, with cultivated areas also used for pasture and therefore frequently overgrazed. In this belt millet is the staple food, while gum arabic is tapped from the acacia trees as a cash crop in Kordofan province. Just south of this area lies a belt where the pastoral Baggara live. They move south in the dry season, returning north when the rains come. In the sudd proper live the Nilotic tribesmen (Dinka, Nuer, Shilluk) whose livelihood may be radically altered by the Jonglei canal. The southern province of Equatoria is sparsely populated, with only 2% of land under cultivation, and where tsetse fly infestation precludes livestock farming. In this area the Azande and others practice shifting cultivation. Since 1945 a scheme for growing short-staple cotton has met with some success, although cash cropping has been inhibited by the Civil War (1956-72), the lack of transportation routes in the area, and more recently, by problems due to the influx of refugees from Zaire and Uganda (cf. New York Times, June 13, 1979).

Irrigated areas have long provided a livelihood for the occupants of the lower Nile valley. The traditional devices such as the shaduf (counterpoised water-dipper) and saqia (ox-turned water-wheel) are still used in the Northern Sudan. Pumping schemes were first used in the early years of this century, but did not become extensive until the 1950s. The irrigated area doubled in the 1950s and in 1970-71 to

5.8 million feddans (1 feddan - 1.038 acres). However, only recently have proposals for controlling river flows and seasonal flooding in the Southern Sudan been made. As we shall shortly be considering the schemes in detail, we now turn to a brief historical review which may explain the persistence of the lack of integration between North and South.

Historical Overview: North and South

The Anglo-Egyptian Condominium which administered the Sudan between 1898 and 1956 largely spared the Sudan the problem of European colonization, but did little to forge a nation out of an area that had been charted to secure British colonies in Eastern Africa and after the defeat of the Mahdist forces at Omdurman and the confrontation with the French expeditionary force at Fashoda in 1898. While the Northern Sudan had developed an Arabic and Islamic culture since at least the fourteenth century, there was little contact with the Upper Nile above Malakal before the mid nineteenth century. Thus until very recently the north, although itself a patchwork of diverse ethnic groups, had a long history of Islamic culture and trade with Egypt, while the south remained almost entirely African; its population negro and nilo-hamitic, practising traditional "pagan" religions. The attitude of superiority which Northerners felt toward Southerners can be based, in part, on the nineteenth century role of the south - as a source of ivory and of slaves. By the time the establishment of the Condominium "the Southerners had a picture of the Northern Sudanese as a people who

their people and property, who regarded them as naturally inferior, and referred to them as "abid" (slaves)" (Morrison 1976, p. 13).

The British policy of indirect rule did little to change relations between North and South, despite their encouragement of cash-cropping in the North. Aside from the (largely unsuccessful) activities of a handful of Christian missions, the major administrative change was to gradually remove all Northerners from Southern areas. Local security forces were formed during theFirst World War and by 1940 even trade contact with the North was discouraged. Some measure of the stasis of the administration is given by the fact that Southerners were not eligible to sit for Sudan Civil Service exams until 1942 - in 1948 only twelve Southern candidates sat for the exam. In the last years before independence, a half-hearted attempt was made to educate Southerners to consider themselves as Sudanese, as partners of the North. Thus when the Sudan gained independence in 1956, and Northern troops returned to southern towns, riots broke out and southern army units mutinied.

The Civil War, which was to last until 1972, devastated large areas of the south; casualties are difficult to estimate, but may have been as high as one and a half million largely caused by famine and disease. The South ultimately failed in its attempt to secede, although guerillas sporadically engaged Northern units until the late 1960s. It was only with the coup d'etat of the military in 1969, which brought General Nimiery to power, that serious proposals for Southern "autonomy"

emerged. Reconstruction began in 1971, and peace with the Southern forces, the Anya-Nya, was formally concluded in Addis Ababa in March 1972.

The Khartoum Government retained control of national defense, foreign policy, citizenship and the bulk of economic, medical and educational planning; the Government created a (Dinka-controlled) Ministry of Southern Affairs, and immediate assistance for refugees and resettlement schemes were implemented (Morrison 1976, 20-21).

Economic development is therefore seen today as an important route for the successful reintegration of North and South in the aftermath of the Civil War. The Jonglei canal project, backbone of Khartoum's current Southern policy, will thus be very important in establishing to what extent the Sudan becomes one nation.

Seasonal migration northwards by Southerners, along with agricultural work during the cotton harvest on the larger schemes, can only provide a short term solution. Moreover in the last decade the rapid development of irrigated schemes in the Central Sudan (Gezira, Khasm el Girba, Roseires, Gash) and the relocation of the Nubian population in Kassala province has tended to concentrate irrigated agricultural production in a broad triangle between Malakal, Khartoum and Kassala. Overpopulation in the northern Nile valley, and stagnation in the southern provinces may be solved by the development of the centre. However, as we shall demonstrate, the solutions offered by the Gezira and Khasm el Girba schemes suggest shortcomings that the proposed Jonglei project should avoid repeating.

Gezira Scheme [Blue Nile Province]

National Government Goals:

Economic: i) creation of large-scale irrigated scheme: raw cotton staple for export markets the main cash crop. Originally developed by British private enterprise, now leased to tenants by Government. ii) Creation of model for further modernization of Sudanese agriculture; iii) Some market-farming to feed urban population.

Political: i) Development of prosperous tenant-farmer class loyal to government; ii) Demonstration of viability of cash-cropping for export markets; ?iii) Possible attraction of foreign capital and aid in developing agribusiness in Sudan.

Funding: Sudan Plantation Syndicate, and Kassala Cotton Company till 1950. Thereafter administered and funded by Government through Sudan Gezira Board [59B].

Ethnic Groups: Local population ethnically mixed peasantry (Muslim); seasonal tribal workers are Baggara, Fellata, Nubians, Nuba, as well as groups from Chad and West Africa.

Accomplishment: Establishment of export cropping, albeit with declining productivity; Scheme with extensions in 1957 and 1962, now supports 94,000 tenants. Some tenants have grown rich, most have not benefitted substantially.

Implementation: i) Contradiction between production for export and tenants' needs (subsistence crops and small scale food cash cropping) increasingly in evidence; ii) Management by outsiders from urban bureaucracy, and rigid regularities have exacerbated relations between tenants and SGB; iii) Erosion of traditional links of cooperation and replacement by wage-labor-increasing indebtedness of small tenants-leads to lethargy and lack of initiative in tenant population.

II. The Gezira Scheme

Any discussion of agricultural development in the Sudan must begin with the Gezira scheme, which is both the oldest and the largest irrigation project in the country, and which produces 75% of the Sudan's main export crop: extra-long staple cotton. The clay plain of Gezira lies south east of Khartoum; bounded to the west by the White Nile which flows from Uganda, and to the East by the Blue Nile which springs from the Ethiopian highlands. The Gezira scheme proper is a system of irrigated farmlands to the west of the Blue Nile, fed by the dam at Sennar some 200 miles above the confluence of the two Niles at Khartoum. Although recent estimates vary, the total acreage of irrigated land prior to the construction of a second dam on the Blue Nile, at Er Roseries close to the Ethiopian border, in 1966, was estimated at just over 2 million acres (840,000 hectares) (Barnett 1977, p. 6) - a total of 12% of all cultivated land in the Sudan. The scheme supported some 94,000 tenants in 1972-73 (ILO 1976, p. 154), and is oriented along two arterial canals: the Main Canal built after the Sennar dam in 1925, and the Managil extension, added in 1957. From these a complex of major and minor canals allow cotton, dura (Soraghum Nilgare), the fodder crop lubia, groundnuts and wheat to be grown in the area, which receives average annual precipitation ranging from 9.5' (250 mms) in the North to about 28.5' (750 mm) in the south. Crops are grown in rotation, an eight year cycle being used in the Main Canal area, a six year cycle in the Managil extension. In the former, four phases of the cycle are fallow, with two years' cotton production and two years of

other crops, while in the latter two each of fallow, cotton, or other crops alternate in subsections of each holding. More recently, wheat has been sown to replace fallow, and groundnuts may be substituted for the lubia crop in some areas; however, at any one time only 64% of the irrigated land is cropped with about 40% of the land under cultivation given to cotton, the main cash crop.

At first blush, then, we see a scheme which has brought intensive agriculture to an area which previously supported much lower population densities of semi-nomadic cultivators. Why, then, has a recent writer suggested that the Gezira scheme "is stagnant, (it) holds little hope of continually rising living standards for its inhabitants, and, as a major component of the Sudanese economy, it exposes that economy, and thus the society, to considerable potential and actual instability."? (Barnett, 1977, p. 15). Is the Gezira only an "illusion of development" as the author we have quoted claims? In order to probe further, and to understand the current problems of the scheme, an outline of the history of the project will be given, so that we may put the achievements and limitations of Gezira, which continue to shape the course of economic development in the Sudan, into perspective.

Gezira - History and Administration

The origins of the Gezira scheme go back to the failure of the American and Egyptian cotton crops in the early part of this century, and the subseuqent impact of this crisis on the British

textiles industry which was at the time largely dependent on these two countries for raw cotton. Shortly before the outbreak of World War I, plans were laid by two British companies, the Sudan Plantations Syndicate, and the Kassala Cotton Company, to develop cotton plantations in the Sudan with a loan guaranteed by the United Kingdom government. Although the dam at Sennar did not come into operation until 1925, and the management of the scheme was handed over to the Sudan government trust, the Sudan Gezira Board (SGB), in 1950, it is important to note that cotton in the Sudan was from the first an export crop. Indeed even today the country continues to import cotton textiles; although the Sudan produces between 30 and 40% of the world's long staple cotton, there were only two textile manufacturing plants in the country in 1975 (ILO 1976, p. 74).

Most important has been the control of the farmland covered by the scheme; it is owned by the Government and leased to tenants for 10 piastres per feddan (£s 1.00 - 100 pts, 1 feddan = 1.038 acres, = 0.42 hectares); administration was the responsibility of the Sudan Plantation Syndicate until 1950 and was then handed over to the Sudan Gezira Board (SGB). This leasing of land was made on the premise that holdings would be indivisible, could not be mortgaged, and that each tenant could own no more land than he and his immediate family could farm. However, holding sizes have varied from 30 feddans at the start of the scheme, to 40 feddans in the 1940s; recent figures indicate an average of 25.8 feddans per tenant in the Main Gezira area, of which 22.1 feddans were cropped annually (ILO 1975 p. 154).

Of these holdings, between 25 and 33 percent will be under cotton at any one time, depending on the rotation scheme used. Furthermore, few of the tenants are able to farm their plots on the basis of family labor alone - most operate with assistance from their kin-group, or other villagers. The very richest, and the very poorest use hired labor, especially during the spring cotton harvest. It is estimated that some 200,000 laborers, mostly from Kordofan and Darfur provinces, although some from Chad and West Africa, come to the Gezira every February as cotton-pickers, and another 200,000 laborers come from within the Blue Nile itself. We will now consider the social impact of this dependence on seasonal labor and the consequent migration into the Gezira.

Credit, Debt, and the Position of Tenants

One major consequence of granting land-holdings to nuclear families has been to erode traditional obligations of reciprocal aid among extended kin; indeed, the form of credit raised through kinship links, called shail is illegal, since tenants are only permitted to sell their cotton to the SGB. As Barnett points out, richer tenants, particularly those who own trucks, may claim part of others' crops in return for shail loans, and then claim to the SGB that they are better farmers since they can turn over (apparently) higher yields. Other forms of credit, repaid in cash or in dura (which is the tenants' staple food crop) also exist, but large loans are usually only available through kinship links and at a high rate of interest. The system of

indebtedness is not due to inefficient farm practices, nor the reluctance of the tenants to do agricultural work, as the ILO report suggests, so much as it is a response to i) the system of payment whereby the SGB pays tenants in small installments based on expected yields and expected market prices for the following year (both estimated conservatively) and ii) the low rate of profit for all but the young married tenants with few dependants.

Of course the scheme did not bring inequality to a homogeneous, egalitarian society of farmers; slavery and servile labor were widespread in this area up until the early twentieth century, and some marked differences in wealth (expressed by the differential access to good rainlands for the annual dura crop) were not uncommon. Whereas the rich have maintained their wealth, and some families have been able to become wealthy and form matrimonial alliances to consolidate holdings, the poorer tenants have become increasingly indebted and in certain cases neglected cotton production in favor of ensuring that their staple dura is adequately cared for. Although the richer farmers and entrepreneurs (truck-owners, merchants, store owners, and money lenders) maintain good relations with the SGB, there has been little organization among the tenants, or between tenants and laborers, whether local or from other regions.

Tenants and the Sudan Gezira Board

Thus far, we have considered problems which relate more directly to the monetarization of the economy and social life of the

tenants; but there are also a number of administrative complications arising from the SGB and its relations with tenants, which we shall consider next. Just as under the British regime the Sudan Plantation Syndicate was run by British managers, so the staff of the SGB has been almost entirely comprised of Sudanese outsiders from urban backgrounds, mostly trained by the British, and with little knowledge beyond the strictly agronomic problems with which they have been trained to cope. There is, according to Barnett, a considerable measure of insecurity, anxiety and discontent within the Board, despite a policy of devolution by the Ministry of Irrigation which has supposedly been in effect since 1951. According to Gaitskell (1959) this malaise and insecurity existed well before the present regime came to power. In the 1936 Standard conditions of Tenancy, the Syndicate had "the right without the consent of the tenant to take such steps as the Syndicate may consider proper for the safeguarding of the crop, and any expense incurred thereby shall be a debt from the tenant to the Syndicate and may without his answer be deducted by the Syndicate from his share of the proceeds of the crops." On the other hand, "if at any time by reason of breakdown of machinery, canals, or other irrigation work or any other compulsory circumstances the supply of water to the said land is interrupted, the tenant shall have no claim for any compensation on account of the water not reaching the land under cultivation." (quoted Gaitskell pp. 70-71). It is this continuity in administrative technique and paternalist attitudes from the colonial to the post-colonial era that is at least in part responsible for the stagnation in the tenants' lot today.

Tenants are officially forbidden to touch pipes bringing water to their plots, even though the official techniques of irrigation have long been known to be unworkable and subject to abuse by richer tenants (Barnett, pp. 102-105). Although certain well-intentioned measures of devolution have been attempted, notably since the change of administration in 1969, the considerable powers of field inspectors from the SGB and the lack of channels for corrective pressure from tenants remain unchanged. These problems in turn reflect the dependence of the entire scheme on export for world markets beyond the control of farmers, the SGB, or the Sudanese government itself.

In short, we may begin to understand what pressures and constraints exist on the tenants from above.

Tenants and Laborers

The analysis becomes somewhat more complex when we consider the tenants' relations with the stratum below, the seasonal wage laborers. These relations are vital both to the operation of the scheme, and to the question of ethnicity in the Sudan, but they have hardly begun to be studied; there is no clear line separating traditional ethnic inequalities from the incipient class system which is becoming apparent in the Gezira scheme and elsewhere. The peaks of the demand for labor are in February, when cotton is harvested, and during the November food-crop harvest. Wages are thus comparatively high and the price is often set by the laborers themselves, the laborers' rates in turn set the price of local (village) labor. "The result is, then, that the

tenants are very dependent upon their labourers and, in a labour-sellers' market, they frequently have to offer incentives in addition to cash in order to gain access to labour... The tenants are caught between the demands of the organization and the demands of their labourers." (Barnett, p. 180). The laborers from outside the area are largely composed of Fellata from the western provinces and Burgo people of West African and Sahelian origin. These groups are quite distinct, from each other as well as from the predominantly Arab population of the Gezira. In view of the history of tension between Arabic and non-Arabic populations in the Sudan, it comes as no surprise that with increasing immigration into the area from the west Gezira tenants negotiating individually with Fellata and Burgo headmen, while at the same time attempting to cope with administrative demands from the SGB, remain "conservative" in their attitudes both to land use and to their position in the Sudanese economy.

Clearly, in the case of Gezira, more work needs to be done on the ethnic and urban/rural divisions which will continue to have a marked impact on the scheme, to complement the emphasis of recent studies on the convergence of occupational classes in the Gezira, and to explain further the differences between administrators, entrepreneurs, large farmers, tenants and laborers, as well as the effects of the scheme on surrounding areas. It is undoubtedly true that the wider network of world markets will tend to obstruct any major reorganization of this vast agricultural project; however it may prove wise, and indeed more profitable, to increase the managerial role of the tenants

themselves, enabling them both to increase their standard of living, and their participation in a system of production which would collapse without their efforts.

In the Gezira scheme we can discern a development project which has had a mixed impact on those Sudanese who have been involved in it, and where ethnic conflicts have played a subordinate role to the problems of large scale cash cropping for export. The case of the Khasm el Girba - New Halfa project brings the issues of ethnicity and the tension between "schemes" and peripheral populations starkly into the foreground. We may also discern the thorny problem of the diverging interests of irrigated agriculture on the one hand and semi-nomadic and transhumant pastoralism on the other; issues which will be further considered in our discussion of the proposed Jonglei canal. Given the unrealized potential of livestock marketing in the Sudan the case of New Halfa illustrates some of the difficulties encountered in the sedentarization of nomadic populations, and questions the concept of agricultural "schemes" as a solution to this problem.

Khasm el Girba ("New Halfa") Scheme [Kassala Province]

National Government Goals:

Economic: Secondary to Political (see below): i) Development of multiple cash-crops irrigated farming for export and national markets; ii) Development of commercial agriculture in Kassala province; iii) ?Encouragement for sedentarization of local nomads.

Political: Resettlement by Nubian population of lower Nile Valley displaced by Aswan dam scheme.

Funding: Sudan Government and ?World Bank loans

Ethnic Groups: Nubians and small local groups on scheme. Butana region nomadic pastoralists (Beja, Schukinya and others) close by.

Accomplishments: Irrigation of 330,000 feddans, supporting 160,000 population. Creation of New Halfa (population 33,000 approximately) with cotton ginning mill. However, original hopes for sustained growth have faded. Some tenants report negative returns to labor, reservoir has silted up considerably, absenteeism a major problem.

Implementation: Original resistance to the scheme caused high absenteeism among Nubian tenants. Infelxibility of marketing strategies further inhibits incentives to tenants. Most serious problem - lack of provision for Butana pastoralists, especially since grazing close to scheme may damage crops.

III. Khasm El Girba / "New Halfa"

The development of agricultural lands in Kassala province, begun under the British administration, was drastically accelerated by the Nile Waters Agreement signed by Sudan and Egypt in 1959. This permitted the building of the High Dam at Aswan, which in turn required that most of the Nubian population who had inhabited the length of the Nile valley between the first and third cataracts be relocated prior to the development of Lake Nasser and the flooding of Wadi Halfa. Those Nubians on the Egyptian side of the border were moved to sites north of Aswan, notably around the town of Daraw (Kennedy 1977). However the 50,000 souls in the Wadi Halfa district had to be resettled in the Sudan. Since an excellent account of this forced migration and of some of the difficulties involved in the creation of the New Halfa settlement already exists (Dafalla 1975), here we shall be concerned only briefly with the lessons of the "Nubian exodus," before going on to consider its subsequent impact on the nomadic tribes of the Butana region in which New Halfa was built.

The Nubian Exodus

The traditional Nubian pattern of subsistence in the Nile valley combined periods of labor as servants in Egyptian and Sudanese cities, predominantly by younger men, with women and older men engaging in a double-cropping agriculture based on flood irrigation and some animal husbandry. The installation of bore pumps in the Dibiera scheme from 1906 on, gave them some experience with irrigated cotton

cultivation (Dafalla pp. 76-77). The other major cash crop was the date palm. Although this system required intensive labor at harvest time, this mixed economy worked well for the Nubians, and descriptions of Wadi Halfa in the 1940s show it to have been a thriving town in the middle of desert lands. Therefore, when the Nubians were told that they would have to leave the Wadi Halfa area, there was some reluctance to collaborate with the planned move to the Butana region of Kassala, let alone participate in a scheme in which they would be intensive cultivators of cotton and groundnuts for export, along with wheat and other staples.

A choice of sites was offered by the Sudanese government and a ballot taken, but the Nubians' preference for a move to an area north of Khartoum, or to the Gezira was overridden and they were told they would move to Khasm el Girba in the Butana region of Kassala province. Notwithstanding fair compensation, and good organization for the 500 mile (800 km) migration by railway to the area, many of the Nubians took two years or more to adjust to their new roles as tenants on the New Halfa cotton scheme. From the beginning, their relations with local tribal peoples and with the semi-settled workers from Chad who had been brought in to construct the villages were tense. Nevertheless, the migration proper remains a remarkable feat in view of the limited resources available to the Government.

The Scheme - Nubians and Nomads

The Butana region lies in Kassala province, in the South-eastern clay plain of the northern Sudan, between the Ethiopian border and the Nubian desert to the east and north, and the Nile valley to the northwest. It is largely savanna grassland, drained by streams from the Ethiopian highlands which flow northwest; of these, the most important is the river Atbara, which joins the White Nile at Atbara some 250 miles (400 km) from Khasm el Girba. Other, intermittent, streams such as the Gash, disappear into the underground drainage basin. Some water for flocks is caught in hafirs (pools dug to trap rainwater) (ILO 1965).

This area, previously inhabited by the camel pastoralist Butana tribes (Beja and Shukriya), became the site of the Nubian settlement in 1964; the supply of water to be tapped from the dam on the Atbara at Khasm el Girba. The area irrigated lies to the west of the Atbara, some 21,968 tenancies in 1976, each of 15 feddan. Tenants grow wheat, cotton and groundnuts on their feddan farms, and a state-owned plantation is used to produce sugar for the national market. Officially, tenants are not allowed to use their holdings for other crops, nor to feed animals in the scheme, except for one cow and five goats or sheep per tenancy. As in Gezira, tenants share in the costs of cotton production with the managing body, the Agricultural Production Corporation (APC), receiving a 50% share of returns from cotton. They also farm groundnuts and wheat individually at their own cost and profit.

Cotton is ginned in New Halfa town which has a population of approximately 33,000.

The pattern of tenancy was established somewhat arbitrarily, both among and between the Nubian and Butana populations. Of the 21,968 tenancies, 6,407 were granted to Nubians (along with 25,250 feddans or freehold land for free use), 11,632 to the Shukriya section of the Butana, on whose lands the scheme was built, and the remaining 3929 to other Butana subgroups (Sorbo 1977). The total population of the area is around 160,000.

The Nubian settlement consists of 24 villages (of brick-built houses) clustered together, and the Butana of 33 somewhat more dispersed settlements, more variable in size, and with mud and straw houses. Sorbo (1977) characterizes the social services provided for the Butana as "inadequate" and cites the Manager of the scheme as saying that the lack of facilities for the Butana may "have paralysed any interest in agriculture."

We shall go on to investigate the reasons for the failure of the project presently; first of all it should be pointed out that whereas all married, house-owning inhabitants of Wadi Halfa (Nubians and others) were granted tenancies in New Halfa, regardless of occupational status, the system of allocation for the Butana was more inequitable. Since the Butana had little experience of sedentary agriculture, they were given somewhat less fertile areas on the edge of the scheme. Furthermore, they were at first allocated 25,000 feddans in the scheme proper, or approximately 1670 tenancies (although

this was later raised by a factor of ten); since negotiations were conducted through chiefs of the Shukriya many of these tenancies were granted to the families of these chiefs (ILO, 1965). Sorbo points out that "it was rather the provision of free food by the World Food Programme, and the prospects for water supply, schooling, health care and security, rather than the attractions of agriculture, that brought (the Butana) to the scheme." (Sorbo 1977 p. 13). These prospects have turned out to be somewhat disappointing for the sedentarized nomads and Nubians alike.

Tenants' Strategies

Firstly, among the Nubians there continues to be a search for alternative sources of employment among adult males, whether permanently employed in distant towns or doing part-time work in New Halfa itself. Absenteeism is high, and although arrangements for lending tenancies (wakil) are widespread, the attendant losses to cultivation result in lower cotton production per feddan. Nomads too share their time between cultivation and herding their flocks; production has not improved since the first three seasons of the scheme. Relations with the management are further strained by the Butana practise of bringing their animals into the scheme to graze during the spring months.

Why, then, has the Khasm el Girba - New Halfa project failed to "convert" settlers to sedentary cultivation? Why do tenants who do cultivate prefer to hire or "farm out" labor rather than rely on their immediate family? Indeed, what is the attraction of what Sorbo

calls "off scheme interests" to the Nubians and Butana, and can they be integrated into the practice of irrigation agriculture?

We have already mentioned the methods of alloting tenancies in the scheme: it seems clear that from the outset a good number of Nubians who had claimed tenancies by right never settled in the area but delegated their tenancies to relatives. These, then would constitute the "pure absentees" who have moved, sometimes with their families, to Khartoum, Port Sudan, or Kassala and taken to non-agricultural work with which the Nubians traditionally supplemented their income from Nile valley flood plain agriculture.

Problems Causing "Absenteeism"

Perhaps more importantly, however, the precarious economy of the Scheme, more striking than in Gezira, has lessened the enthusiasm of both Nubians and Butana for agriculture. Fluctuating yields have been a problem from the start, reaching crisis lows in wheat and cotton. This has been due to a number of factors: the gradual silting of the Khasm el Girba reservoir has reduced its capacity by at least 25% between 1965-75 (Idris 1975); annual variations in rainfall during the sowing period; the costs of weeding; and poor maintenance of vehicles and farm machinery have all been cited as contributing problems (Sorbo p. 39). Other difficulties include inadequate credit facilities and low prices for groundnut cultivation, which discourages tenants from using this important nitrogen-fixing crop. These disincentives are reinforced by the coincidence of the cotton and groundnut

harvests and the shortage of harvesting equipment. The effects of grazing herds on the scheme, mentioned above, are acute in the spring; while it seems unlikely that this problem can be eliminated entirely, some progress might be made by using the drainage ditches on the Western boundary of the scheme to create irrigated pasture land. Furthermore some water could be allotted for watering flocks in the dry season; this might avert the damage to cotton seedlings when tenants graze their animals in the cotton fields.

According to most writers on the New Halfa scheme, net revenues are low, sometimes negative. Sorbo claims that even if a tenant grew groundnuts, and sold all of his wheat, profitability was so low in the 1975-77 seasons that indebtedness was almost unavoidable. The risk of indebtedness has been aggravated by the steady rise in the cost of living and disappointing market prices for the crops grown on the scheme. Given this economic impasse, it is perhaps not surprising that the Butana have retained their herds and the Nubians their alternative jobs. For the Butana, pastoralism provides security from starvation should a crop failure occur, as animals are a good source of cash (cf. ILO 1976, Ch. 6) for hiring labor or repaying loans, particularly since livestock prices have continued to rise in recent years. Nubians wishing to remain in the area have increasingly turned to other means: employment in the ginning plants, administrative and teaching jobs, working in hospitals and businesses.

Among those tenants who combine agriculture with other forms of work, it is the Butana who, with a wider network of kin, can mobilize

sufficient labor to manage both on- and off-scheme interests, whereas the Nubians have tended more toward allowing better-off tenants to accumulate holdings through the wakil system mentioned above.

Thus for many tenants, particularly those who do not command a strong family labor force, there are indeed more attractive alternatives to intensive agriculture. No doubt the Nubians' preference for sending their children to school rather than to the fields, and the reluctance of both Nubians and Butana to let their women work in the fields, are contributing factors. However, like the Gezira tenants, the New Halfa tenants are confused by the system of payment in delayed installments, frustrated by fluctuating market prices, and find themselves in the peculiar position of being at once laborers (but not wage laborers) and part-owners. As Sorbo says: "The New Halfa tenant is in an intermediate stage, whereby he is in effect only an employed labourer; and at the same time is treated as a profit-sharer and therefore not put on a regular wage basis. In New Halfa, this has turned out to be a perilous and far from enviable position." (Sorbo 1977 p. 39). This is no doubt one of the more important reasons for the maintenance of other forms of employment and wealth. The poorest of the New Halfa tenants are by and large those with no other source of income than their land; with the APC apparently condoning wakil and share-cropping arrangements, internal differentiation of wealth has become more marked. The poorer tenants become indebted to richer tenants who, as in the Gezira, are in auxiliary businesses and often own vehicles or machinery, or who have sons in salaried employment. Among the Butana there seems to be less

internal differentiation, but exploitation of the less experienced tenants by crop-buying merchants is not unknown.

Prospects for New Halfa

The poor record of the New Halfa is not likely to improve significantly in the near future: while production could be intensified and made more efficient, few tenants can make do from their income from irrigation agriculture alone and apart from the labor lost to agriculture by alternative employment, the Butana practice of allowing herds to graze within the scheme in the summer months has led to deterioration of pasture and the freehold land around the tenancies. While the tenants practising this mixed economy see no dysfunction between grazing and cultuvation, the APC has done little to change this view.

As with Gezira, it is the dependency of the New Halfa scheme on the export market prices (which are fixed from without, regardless of the costs of production), which has hampered crop specialization; it is futile to blame pastoralism, the scale of irrigation, or indigenous "laziness." Production cannot be significantly intensify without some incentives to tenants: and notably the stabilization of yields and prices, and measures to encourage a more viable livestock industry. There are indeed lessons to be learned from Gezira and Khasm el Girba which may fruitfully be applied to similar projects proposed for the Southern Sudan, as well as to the future of these schemes themselves.

It appears that the overdependence on cotton as a cash-crop is finally being recognized in the Sudan. Diversification is essential if imports of food and simple commodities are to be reduced. In short, the South does not need a grand monocrop irrigated scheme, but rather a mixed program of cultivation, fisheries and livestock improvement, which should begin with the Jonglei project - to which we now turn.

Jonglei Scheme [Equatoria Province]

National Government Goals

Economic: i) Digging of canal to drain sudd marshlands and increase flow of White Nile waters to Northern Sudan (and Egypt); ii) Creation of secondary projects to improve pastureland in local area, stimulate fisheries, agriculture, and animal husbandry; iii) Improve North-South communications and market exchange.

Political: Opening of Southern Sudan to economic development, particularly favoring Dinka tribes in Canal area. Gesture of goodwill toward southerners in wake of civil war (1956-72).

Funding: Sudanese Government, World Bank, other international loans.

Accomplishment: Although work on canal has just begun, it is hoped that scheme's secondary projects will encourage livestock production and crop cultivation in Jonglei area. Planners have been remarkably responsive to local response (notably in realigning canal to improve drainage and minimize disruption of local settlements). Long term ecological and social impact remains uncertain.

Implementation: To be assessed. i) Most important that local incentives not be neglected in favor of increasing water flow to the north, especially if full budget for canal scheme is not forthcoming; ii) Attempt to encourage Dinka to breed their cattle selectively, for commercial markets, may meet strong cultural resistance; iii) Project must be linked to further integration of other southern groups into national society.

IV. The Jonglei Canal and the Southern Question

Introduction

In one respect, the Jonglei Canal Project is a key example of a project designed primarily to benefit a powerful and distinct majority at a potentially great cost to the ethnic minority resident in the area. A large canal, almost 300 km long is to be dug through the region inhabited by the Nuer, Dinka, and Shilluk peoples. The main purpose of the canal is to increase the water available for large mechanized farms far down river in the northern region of the country, and to Egypt's Lake Nasser.

The Jonglei project is unique, however, in that the local ethnic minority has had considerable political clout in the current decision-making milieu. The Dinka, although clearly an ethnic minority within the context of the Sudan, are nonetheless a very large minority. They number almost two million, comprise 11% of the population of the Sudan and 40% of the population of the semi-autonomous southern region. The Shilluk and Nuer are numerically small groups, but each has influence exceeding what one might expect. For the Shilluk this is due to their internal political cohesion and centralization around an ancient institution of kingship. For the Nuer, this is partly due to their well-deserved reputation as fighters which they earned during the sixteen year long civil war.

The project is the most recent of the three Sudanese development programs considered in this report; indeed the digging of the canal began only this year (1979). Its planning is a product of contemporary issues and attitudes regarding development in the Sudan - concern for environment, for socialism and equity, and for the preservation of the delicate post-war cooperation between north and south. The plans for the canal are a product of a political era in which the central government must be very wary of seeming to exploit the southern region.

Area and Peoples

The White Nile flows north past the Southern regional capital of Juba and past the town of Bor into the sudd (Arab for barrier), one of the largest swamps in the world. The sudd wetlands cover an area of over 8,000 km^2. Flying over the sudd one sees lakes, channels, lagoons, water everywhere for hundreds of kilometers. Floating vegetation chokes the twisting channels of the White Nile rendering the river impassible to transport for long periods of time. Half of the Nile water that enters the sudd never emerges from the northern end. It spreads out and is lost through evaporation and seepage. During the rainy season, the White Nile overflows its natural levees and floods across great areas of intermediate pasture.

The inhabitants of the region east of the sudd (it is impossible to live in the sudd) are northern Nilotic peoples engaged in traditional forms of livelihood. The Dinka and Nuer especially have a

reputation among development professionals in Juba as being "hopelessly backward" and conservative. This reputation is not entirely accurate, of course, but it serves to highlight the degree to which the people of this region are unfamiliar with the economic options of a modernizing world.

The Bor, Twic, Nyareweng and Ghol Dinka, and the Nuer have permanent villages on the uplands - generally on sandy ridges. Here they plant sorghum during the rainy season. During the dry season they move their considerable herds of cattle, sheep, and goats west toward the sudd. First they use the intermediate pastures and then at the height of the dry season, they camp in the toich, the wet grazing lands on the edge of the sudd and along the banks of the river. The Shilluk are the most northerly of the three groups; they live in year-round villages on high banks of the White Nile in the region near Malakal. They keep very few cattle, but rely on agriculture (sorghum and maize) and extensive fishing operations. In contrast to the Nuer and Dinka groups, the Shilluk have a reputation for innovation and economic competitiveness.

In the region affected by the proposed canal live almost one million people, perhaps two million domestic livestock, and even greater numbers of important wild animals. The proposed canal has ecological, developmental, and political implications far beyond this immediate region, however.

The Canal: The Plan from Above

By 1981 the Sudan will have utilized its share of the Nile waters under the terms of the 1959 Nile Waters Agreement between Sudan and Egypt. This agreement grants 25% of the water (as measured at Aswan) to the Sudan for a total of 18.5 milliard cubic meters (1 milliard = 1000 million). The primary purpose of the Jonglei Project is to increase river flow by 3.8 milliards m^3. Since 1904 at least, engineers have thought about ways of bypassing the sudd which remains an important obstacle to communication between the North and South in the wet season. In the 1930s the Egyptian Government submitted to the colonial government of the Sudan a series of proposals for a canal to take off from the White Nile at Jonglei (86 km north of Bor) and divert a daily flow of 55 million m^3, and would have reversed the seasonal flow of the river in the process. A Jonglei Investigation Team was established by the Sudan Government and it completed its lengthy report in 1954, suggesting major modifications of the original Egyptian plan. Most importantly it recommended that the proposed daily flows through the canal should be reduced to 35 million m^3, which would ensure that the annual regime would be maintained. The report also recommended that the overall project should be planned in such a way that the local populations should be the major beneficiary. As Scudder (1978) has noted, this report was a pioneering attempt to plan a major African development scheme in such a way as to include the local ethnic minority as well as the down-river users and the urban sector in its planning.

In 1959 Sudan and Egypt signed the Nile Waters Agreement setting up a permanent joint Technical Commission for Nile Waters, which undertook a series of studies on how to increase river flows. Following this, a modified proposal for the Jonglei project was submitted in 1974. The proposal increased still further the possibility that the local inhabitants would be the major beneficiaries. The canal's flow was to be reduced even more to a daily rate of 20 million m^3. Additionally, an irrigation canal was planned to run parallel to the main canal, with a flow sufficient to irrigate 90,000 hectares along the canal. Together the two canals would divert 10 percent to 15 percent of the rainy season flow of the White Nile at the offtake point of Jonglei. The dry season flows would be reduced by 20 percent to 25 percent (Scudder 1978).

By reducing the flows, the revised proposal promises a less drastic alteration of the environment of the area and lessens the risk of long-term dehydration; at the same time it offers some positive development opportunities to the local population. First there is the large irrigated agricultural area, aimed at encouraging crop-cultivation by the Nilotic peoples. Second, it is projected that by reducing the rainy season flooding of the intermediate pastures the greatest restraint to increasing the livestock of the area will be removed. Third, the canal will provide relatively cheap and reliable transportation for an area now largely inaccessible for most of the year. The details of how these possibilities are to be developed were not spelled out in the 1974 proposal.

A Jonglei Socio-Economic Research Unit was set up which began survey work in the area in 1976; much of the data from these researches is not yet available. Since work in this region can only be organized during the dry season, slight delays in programs often slip almost a year in their schedule. The most complete information available is that pertaining to the Dinka area at the southern end of the proposed canal. Out of this work comes a major proposal to change the course of the canal so as to benefit the local inhabitants even more.

Realigning of the Southern End of the Canal

Two realignments of the southern end of the canal have been proposed since 1976. The consultants for the engineers suggested that the canal should begin further south, just north of Bor rather than at Jonglei. Several of the recent studies of the social and environmental aspects of the project have opposed this plan and have suggested that any extension to Bor should be dug further east. The difficulty with the engineers' proposed extension is that it would cut right through the most densely populated area of Dinka land, cutting right across the north-south ridge from Bor to Kongor, the dry season home of almost everyone who makes use of the area. The Euroconsult and Jonglei Socio-Economic Research Unit reports insist that a realignment east of this ridge would lessen social disruption and furthermore be of considerable aid to the potential development of the livestock industry. Such an alignment would increase the amount of newly reclaimed year-round grazing lands and greatly reduce

the number of cattle which would have to make the difficult crossing of the canal during the annual migration to the toich (area around the road between Bor and Malakal). Payne's study of Dinka livestock of the Jonglei area, further supports this proposal and couples it with a consideration of what sorts of crossings would be suitable for livestock to traverse the canal. His several recommendations indicate that the problem of animal crossings could be major if the numbers of animals involved were extremely large. With the new eastern alignment proposal only the cattle of the Nuer would be involved. The larger numbers of Southern Dinka cattle would always be west of the canal.

The Ministry of Irrigation in February has accepted these revisions, although they will treble the cost of the canal's construction. However it is not clear who will benefit from the 90,000 hectares of irrigated agricultural land. Neither the Dinka nor the Nuer find it profitable to devote time to agricultural activity, especially if the canal is really going to increase the carrying capacity of the pastureland for their herds. Furthermore, the overall long-term environmental effects of the canal cannot be predicted. It seems well documented that the canal will reduce the difficulties during the wet season, but it is not clear whether the 20% (or more) offtake of Nile water will significantly reduce the usefulness of the intermediate grazing areas and even the toich during the dry season. It may be that the local population will pay as yet unforeseen prices in exchange for providing water for irrigation downstream in

in Northern Sudan and in Egypt. On the other hand, it is not certain that the various realignments, modifications, and reductions of the flow offtake will indeed provide the predicted increase in water for northern irrigation projects. Any such project is a gamble, although in this case, the interests of the local ethnic minority populations have been considered and acted upon in proposals.

Proposed Projects for Peoples of Jonglei Region

There is a major commitment on the part of the government of the Sudan to use the canal project as a means of developing the sudd hinterland while at the same time providing water for northern mechanized agriculture. UNDP and the Executive Organ for the Jonglei canal together circulated in December 1976, "A Request for Funding of Development Projects in the Jonglei Area," which outlined thirteen potential projects. How many of these projects will be picked up, funded, and implemented by international donor organizations is difficult to say.

One major new donor to development in the Sudan, USAID, has thus far not become involved directly in the Jonglei Project. Its reasons may be indicative of the attitudes of other donors: AID's reluctance stems in part from a wish to become involved only in projects that can be implemented in a more or less independent fashion and which are not overly dependent on actions (e.g., research findings, surveys, output of training centers) over which there is no AID

control. The AID project design team for traditional agriculture suggested, nonetheless, that because of the great importance of the Jonglei Canal Project the U.S. should consider funding and implementing one of these sub-projects on the request list. The Executive Organ list proposed three Integrated Rural Development projects, one each in Dinka, Nuer, and Shilluk area.

Each proposal calls for a modest ($3,000,000), experimental, and pragmatic scheme which would attempt to improve livestock, agriculture, health and education in a chosen district. The emphasis would not be on production factors or on the development of any one economic activity, but rather on maintaining and developing a package of self-sustaining services and activities that contribute to the general quality of life of the inhabitants.

Payne (1977), a development consultant for the UNDP, makes a number of proposals pertaining to livestock. Most importantly, he suggests the establishment of a Community Livestock Farm and a Center for the Introduction of New Technology, both at Kongor.

The Center for New Technology is to be a vocational training program providing skills required for alternate employment opportunities associated with the Canal. Training will be also provided for the new practices to be introduced into livestock husbandry, agriculture, and fishing.

The Community Livestock Farm would be used for:

(a) A Nilotic cattle selection breeding program.

(b) Crossbreeding investigations.

(c) The introduction of new types of domestic livestock such as the water buffalo.

(d) Animal health investigations.

(e) Management and feeding investigations.

(f) The demonstration and teaching of new livestock husbandry techniques.

The Community Livestock Farm will be the demonstration and teaching farm for the proposed Center for the Introduction of New Technology.

Payne's report on the Dinka Livestock Industry in the Jonglei Area makes a large number of interrelated proposals for protecting and increasing the Dinka livestock under the conditions provided by the canal. He provides ample documentation that the canal project will quite likely be a great advantage in improving the main means of subsistence for the local population.

Another of the development projects submitted for international financing is a Sudd Fisheries Development Project which will concentrate on setting up three experimental marketing cooperatives. At present annual catches in the sudd do not exceed 6,000 tons, whereas the potential is estimated to be over 50,000 tons of fish per year. The major bottleneck at present is clearly in marketing, storage, and transportation. Until now, river transportation has been unreliable and sporadic largely because the floating hyacinths and papyrus

block the passage of river-boats, and furthermore the economic under-development of the area did not make shipping financially feasible or attractive. In addition to the fishing cooperatives, boat-building cooperatives are being started: Ferro-cement barges and smaller wooden plank boats are already proving to be a cheap means of relatively rapid transport in the area. Nuer, Dinka, and Shilluk groups are becoming involved in commercial fishing; the first phase of this project will be to organize one trial fishing cooperative from each ethnic group.

The development aspect that seems least clearly thought out at this stage is the irrigated agriculture. Partly, this may be because it does not seem problematic to many in the Sudan, who, with the model of Gezira before them, see such schemes as a royal road to agricultural development. Payne (1977) suggests that some of this irrigated area should be reserved for fodder crops as part of an overall integrated livestock program. Scudder raises the question as to whether this land can be used really to benefit the local population or whether they will just become wage-laborers on highly mechanized agricultural schemes. All indications are that this area will be primarily devoted to producing food for consumption in the southern region of the Sudan (where it is badly needed) rather than producing material for export (such as cotton) overseas.

The Jonglei project itself will only provide the basic infrastructure for these and other local development projects. All such

projects must be funded and implemented by diverse international donor organizations: obviously some projects will and others will not be funded. Moreover it is not clear yet how much overall planning and integration of such projects can be maintained over time; we recommend that it be maintained for as long as possible, if the local population is to benefit from the scheme.

Necessity of Auxiliary Development Projects

Whether or not a sustained development of this area for the benefit of the resident ethnic minorities occurs depends largely on the continued support of both the government of the Sudan and of the international development donor community. It is not difficult to imagine a number of scenarios in which the commitment to this aspect of the Canal project might wane once the water begins to flow (or fails to flow as much as expected) into the lower Nile. Scudder considers three issues that might bear on maintaining the commitment to the Jonglei development.

First, he argues persuasively that such development makes sense in purely economic terms. The economic potential of the sudd in terms of fish, livestock, hides, game, tourism, and harvested wild vegetation is possibly greater than the potential economic benefits of increased water irrigated agriculture. In terms of such hard issues as energy, food production, and balance of payments, the continued development of this area makes sense for the nation, as well as the Southern provinces.

Second, Scudder argues that river basins and wetlands such as the sudd are ecologically important to vast savanna areas to the north. If developers neglect the need for careful monitoring of water supply, changes in the Jonglei area could have consequences for Northern Sudanese nomads such as the Baggara who are now pressing hard upon the Dinka because of pressures of deteriorating pasturelands they face at the other ends of their migratory routes. Clashes in recent years raise the spectre of new North-South hostilities. In short, the sudd is the anchor to a vast savanna pasture; if its ecological importance is ignored, the result may be grave environmental and political crises far north of Jonglei and Kongor, even to the point of allowing the desert to spread South and East.

Third, for those who think the Nuer, Dinka, and Shilluk too backward and conservative to respond to development programs, Scudder presents facts about recent changes in attitudes. Sixteen years of war and five years of post-war rebuilding have changed these peoples. Appearances belie the truth; it seems as though they have not changed their way of life for centuries. But this "normality" has been built upon what was five years ago a devastated region. People already have formed cooperatives, created successful cattle market operations, worked as laborers; and during the war, some went into exile in Zaire and Uganda where they observed agricultural innovations. They are already planning for a somewhat different and uncertain future.

Clearly, it will take continued pressure from UN consultants and from Dinka, Nuer, and Shilluk politicians to ensure that the Jonglei Project continues to be a development catalyst for the local region and not just another water project like Gezira and Aswan.

It is thus vital that local, regional, and national interests be carefully weighed (along with international business interests) in the development of the Jonglei area.

V. Afterword

These three case-studies mark significant shifts in the history of Sudanese economic development. The Gezira, after thirty years, appears less than an economic miracle: poorer tenants in particular are extremely vulnerable to fluctuations in market prices and the management of the scheme requires improvement. Moreover, initial increases in productivity on new schemes are rarely sustained. The silting up of dams, and the accumulation of toxic salts where drainage is inadequate, remain serious technical problems, which, as Scudder has pointed out, must be considered in the context of developing entire river basins, not just in localized schemes. The Khasm el Girba scheme began as a way of relocating a large ethnic population but now reflects a different social problem - accommodating the local Butana groups, and other migrant populations to the scheme. Finally the Jonglei project, it is hoped, will mark a shift away from

large monocrop schemes for export crops only, toward promoting local enterprise and more integrated development of cultivation, fisheries and livestock, as well as improving geographical and cultural communication between North and South.

As we have repeatedly stressed throughout this report, the ethnic tensions which have surfaced in Sudanese history are themselves embedded in economic contradictions; these in turn depend on world markets and the balance of payments. We hope that the underdevelopment of the South, and the north's over-reliance on (African) immigrant laborers are problems with equitable solutions. That is, in implementing development projects which will further unity among the Sudanese peoples, while increasing agricultural production. Opportunities must be given to the Southern tribes that will ensure their cultural survival in an ethnically mixed Sudan, as well as improving their position within the national economy. Those involved in planning development schemes may be tempted to radically restructure local economies without listening to what those who will have to live with a project's consequences have to say. Fortunately, the history of development projects in the Sudan seems to indicate a gradual shift toward schemes that incorporate local reactions, stimulate local participation, and recognize the vitality of ethnic/cultural communities rather than considering these elements as obstacles to growth.

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This report was compiled after an extensive review of published materials on Sudanese rural development, its anthropological and historical contexts. Such a review cannot be complete and up-to-date however, as many policy documents have not been published and do not circulate widely: to give just one example, the United Nations Development Projects (UNDP) office does not release project reports for five years after submission. Other materials are only available from Khartoum. The following bibliography, then, lists: i) sources cited in the text of the report; ii) published works consulted pertaining to Sudanese development and anthropology; iii) policy documents, unpublished sources not cited in the text.

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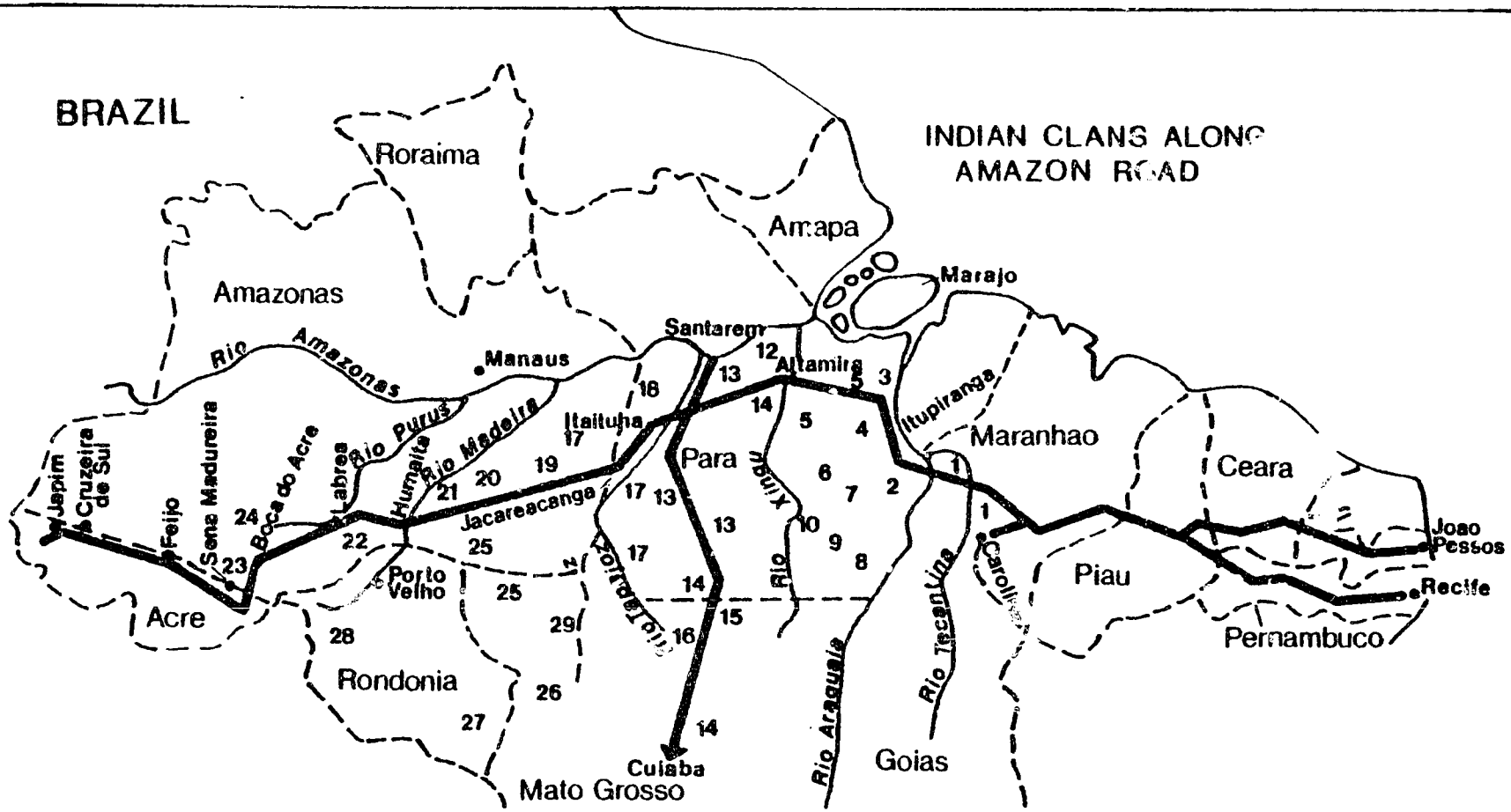
The Transamazonica Project

J. Clay



1 Apinajes
2 Suruis
3 Paracanas
4 Araras
5 Acurunis
6 Acacoa-tis
7 Xicrins/Jores
8 Gorotires/Caiapos
9 Cubencrains/Ouenes
10 Crocaimoros
11 Araras Caraibas
12 Jurunas
13 Cararoes/Caiapos
14 Apiacas
15 Crein Acores
16 Suias
17 Mundurus
18 Maues
19 Canumas
20 Muras
21 Parintintins
22 Paumaris
23 Catuquinas
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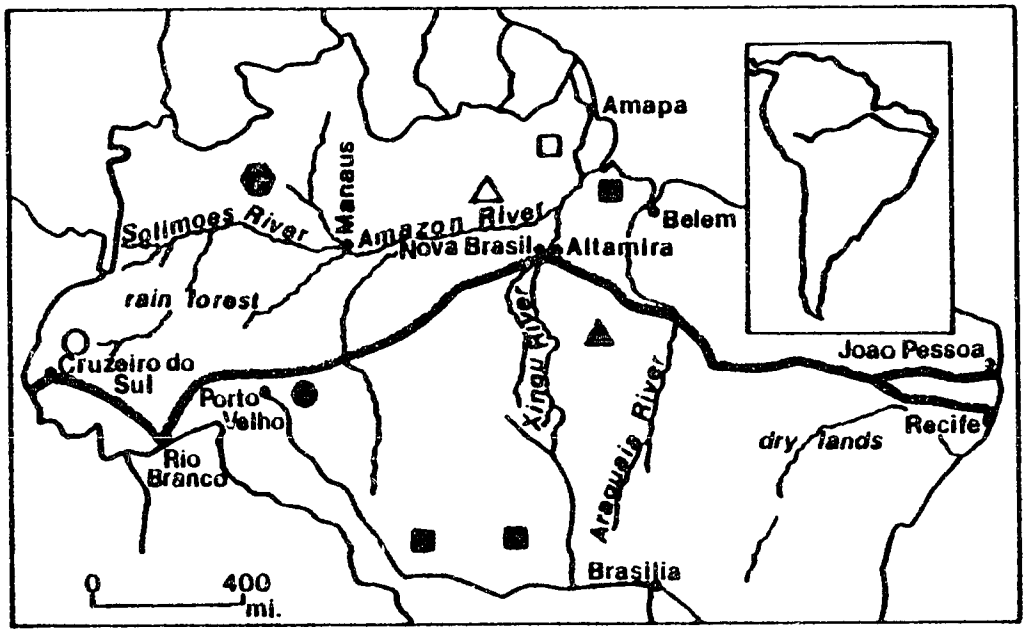
26 Nhambiquaras
27 Parecis
28 Pacaas Novos
29 Erigptapsas

Source: Brazilian Bulletin, Aug./Sept. 1970



▲ iron ore ● tin ■ cattle ⬢ rubber
△ aluminum ○ coal □ manganese

RESOURCES ALONG THE TRANSAMAZONICA

Source: Newsweek, July 3, 1970

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Purposes of the national government

Economic: Access to underdeveloped region in order to develop mineral resources, encourage agriculture and ranching.

Political: Hoped to encourage migration from poor and over populated northeast of Brazil to unsettled region. Give Brazil military presence and effective control of its interior.

Ethnic groups: American Indians

American Indians - original inhabitants living traditional way of life.

Peasants - of mixed origin doing subsistence agriculture and some cash cropping by residents in the Amazon.

Brazilians from the south - large cattle ranchers and developers who came to control most of the region.

Brazilians from the northeast - labor force to clear vegetation, but mostly unemployed afterward.

Funding: Brazilian money, international bank loans, private and national sources preferred because they had no restraints attached to them.

Role of Anthropologists: No official role, but raised the issue of Indian rights within and outside of Brazil.

The Transamazonica Project

Background

From its announcement in mid-1970 until its effective abandonment with the development of the Polamazonia Program in September of 1974, the Transamazonica highway, related road construction, and development projects in the Amazon, were perhaps the most controversial and yet least known development projects ever undertaken. Critics claim that the road goes from nothing to nowhere, that it will destroy the flora and fauna of the world's largest tropical rainforest, that Brazil's Indians will be lucky to survive these development attempts, and that the project is the biggest boondoggle in Brazilian history. Yet by 1979 it was not even possible to tell if the road was ever completed. Authoritative sources published within the last year disagree. Whether the road was officially completed, or if it was officially shortened and some other road was then left unfinished is of little concern to us. In fact the government has not maintained the road or bridges along completed sections. This has led to the progressive abandonment of large stretches by users.

This case study explores the impact of the Transamazonica on the indigenous groups of the Amazon basin. However, the Transamazonica was just a part of a much larger road building campaign within much more complex development program. Therefore, the Transamazonica cannot be analyzed outside of a larger political and economic context.

Richard Bourne, who has completed some of the most detailed first hand research on the "assault on the Amazon," sums up the task nicely:

> Eliseu Resende was right when he said that Brazil had never conducted serious cost-benefit studies before embarking on the Trans-Amazonica adventure .... A political decision was carried out, at first regardless of the consequences. But that does not mean that it is necessarily impossible to draw up some assessment of the costs and benefits of the recent move into Amazonia. The fact that this is a difficult task, involving value judgments and an awareness of the trajectory of time, should not divert one from making the attempt.
> (Bourne 1978: 278-279)

On June 6, 1970, while visiting the worst hit drought areas of the Northeast, President Medici promised immediate action to help the victims of the drought. Just ten days later the government announced the creation of the National Integration Program (PIN). The first steps outlined for national integration were the construction of two highways: the Transamazonica and the Santarem-Cuiaba. Two days later, on June 18th, 1970, bids for the construction of the first sections of the highway were solicited by the government, and construction officially began on September 1, 1970." (Rabelo, cited in Goodland and Irwin 1974: 133).

In this way one of the most publicized and controversial development projects in history was begun. While some national and international leaders in various fields condemned any road building in the Amazon, it is clear that much support for the project existed within as well as outside of Brazil. The Transamazonica quickly

became a gesture of security, sovereignty and arrogance. However, the road and related development activities in the Amazon were influenced by continually changing events and conditions. These changes in development programs had a profound impact on the indigenous residents of the region.

There were no impact studies or cost/benefit analyses undertaken before the construction on the Transamazonica. A US AID official who had been in charge of the Brazilian office told me that the Brazilian government did not want any impact studies done because they knew such studies would slow down or halt the project altogether. It seems likely that one reason the government initially planned to finance the entire project itself was to circumvent such studies. They did not want their own resources or, worse still, borrowed funds to be spend on cost/benefit analyses rather than on the clearing of the roadways or the settlement of colonists in the Amazon.

Initially the Transamazonica was a symbolic effort, designed to take attention away from problems in the Northeast and deteriorating conditions during the height of the Brazilian "boom." It was also designed to establish and reinforce Brazilian presence and authority in the Amazon basin to prevent border disputes or claims by outsiders to an undeveloped region. Everyone assumed that economic returns could not be expected immediately from the Transamazonica. Nevertheless, benefits which were to come from national integration (PIN)

-- and the Transamazonica by implication -- were consistently stated in economic terms.

The Stated Goals of the Transamazonica Project

The Transamazonica was designed to connect the northeastern highway system with western Amazonia.* The desired result was to traverse virgin areas which could be used for cattle raising or agricultural projects. At the same time, the road was to provide access to mineral resources and to encourage agricultural settlement in their vicinity (Goodland and Irwin, 1974: 126). Further, the road was to provide an overland link for some of the larger towns in the interior that had developed around the riverine system of transportation. This overland route was to provide complementary as well as alternative systems of transportation that were to stimulate the economy of these towns and their hinterlands (Goodland & Irwin, 1974: 131).

Along both sides of the highway strips of 100 kilometers were to be incorporated into security zones set aside for national development (Presidential Decree of April 1, 1971). The decree officially exempted Amerindian lands, but made no mention of those lands

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*From 1952-68, the road network in Brazil more than tripled, reaching 940,000 kilometers. Road quality has also been substantially improved, with paved roads increasing from 36,000 to 60,000 kilometers between 1960 and 1972. The Transamazonica should be viewed as a part of a major road building effort (Sanders and Bein: 594).

occupied by peasants living in the area. The strips were to be used for agricultural colonization under INCRA (the National Institute for Colonization and Agrarian Reform), and one year later (1972) they provided some of the lands that could be sold by INCRA (Goodland & Irwin, 1974: 131).

Reasons Behind the Transamazon Highway Project

There are a number of political and economic concerns that seem to have come together at the end of the sixties and early seventies which contributed to the final shape of this project. The following list is certainly not complete and the order is not intended in any way as a ranking. Some of the important factors, however, appear to be the following:

1. The Highway was announced immediately after the President visited the drought stricken Northeast. The highway appears to have been seen as an acceptable solution to the population and poverty problems of that region. With 27 million people living in the region and a 3% population growth rate, there were enough people born each year in the Northeast to lay head to toe the entire length of the Belem-Brasilia highway. It is increasingly clear that the military government was not willing to attempt the types of agrarian and social reforms that would have been needed within the Northeast to have alleviated the problems of that region.

2. The idea of national integration was put forward as a primary objective of the roadbuilding scheme. Some sincerely believed it a

good idea to connect the land without people to the people without land.

3. The government wanted to transfer large numbers of Northeasterners to the Amazon through a colonization program (3/4s of all colonists were to have come from the Northeast). While they had hoped to sponsor 500,000 colonists, many officials had assumed that at least that many more individuals would have gone simultaneously to the region. In addition to the colonists, there were to have been a number of jobs created through the road construction program and heavily financed agricultural, ranching and industrial projects.

4. The government did not want to sponsor any kind of population control, in part due to all the unoccupied lands in the interior. During the sixties population pressure became severe in both the Northeast and the South. Government officials decided it would be better to encourage formal colonization efforts in the Amazon rather than simply to let migrants spontaneously go to the area of their own accord.

5. The road building network was to have made the Amazon region more secure. While government officials spoke primarily of establishing firm boundaries with Amazonian basin neighbors, there also appears to have been a desire to establish military presence in the central Amazon basin as well. After all, the Transamazonica began in the Northeast and only at its projected culmination with Peru was it actually designed to even come close to one of the neighboring

countries. Many have written that the hydroelectric projects proposed by the Hudson Institute of the US were a pressing concern of the Brazilians. They felt that they had to establish their presence in the Amazon so that an aggressive foreign power could not take over the vast richness and untapped wealth of the region. Other factors that have been lumped under the umbrella of national security are the revolutionary groups that were discovered in the Amazon region, and more significantly, the existence of huge foreign owned tracts of land and rights to mineral exploration. Since the ownership of these lands and the right to explore for minerals had been granted before the announcement of the Transamazonica (it appears that much of the sale of land in the region had actually occurred even before the military came to power), it seems that the highway represented a means of monitoring foreign activities in the region as well as a means of establishing a Brazilian presence there through the influx of a large number of northeasterners. In order to guarantee a continued Brazilian presence, the Military government created the Fifth Army which was to "guard" the Amazon.

While it is clear that there is no single cause that led to the development of the Transamazonica, it is also clear that the stated reasons behind the construction are only half truths. Getting at the heart of the matter can only be accomplished by reading between the lines, by seeing what types of projects were sponsored, what firms got the contracts, what revenues were hidden in which budgets,

which projects were the first to be cut, what individuals left the government to become "ready made" ranchers or industrialists in the Amazon, etc.

In some ways the area of the Amazon was really only getting the long overdue attention that it had deserved for some time. The basic question, then, becomes could the money have been better spent within the region, or perhaps better in another area of the country? In a sense the Amazon embodied the hope of a better future for all Brazilians. In this way it was essential for the military to gain control of what was happening in that region and take credit for it. However, the Amazon came to represent both the potential of Brazil and the requirement of Brazil's development (Bourne, 1974: 273). Cast in this light, it becmae unBrazilian to criticize the moves into the Amazon.

The General Economic Situation in Brazil 1970-78

Economic growth in Brazil from 1968-74 has been characterized as a "boom" period, with the GNP accelerating at a rate of 10% per year. In 1975, however, this rate was reduced to 4.3%. This abrupt turnabout is directly related to the increased cost of oil in 1974. Government deficits in 1974 were 4.7 billion dollars (US) and in 1975 were still 3.5 billion. In 1975, oil alone accounted for 3 billion dollars of imports to Brazil. This bill was roughly three times larger than the bill of 1973. Today Brazil is only 20% self-

sufficient in oil; however in 1960, Petrobras, the national oil company, produced 45% of all oil consumed in Brazil (Davis 1977: 31). Brazil's economic development during the sixties was clearly dependent upon the increased consumption of foreign oil. In the seventies, though, that was an expensive proposition.

In 1976 Brazil had reserves of 4 billion dollars and esternal debts of 22 billion. Interest payments on the foreign debt as a percentage of export income went from 30% in 1974 to 39% in 1975 to an estimated 44% in 1976 (The Economist 1976: 11).

Neither the profits nor the debts from the economic "boom" or the depression beginning in 1974 were spread equally throughout the population. For the years between 1960 and 1970 the per capita real income of the lowest income receivers increased only 0.75% whereas for the top one percent (already immensely rich) the figure was 11.2% (Rust 1971: 184-185).

It is difficult to estimate which groups of the population are "paying" for the development policies of the Brazilian government, since most of the forms of payment are centered around opportunities lost, or possibilities forgone. However, one of the key indicators of the health of the economy might be the infant mortality rate and the death rate of children. Both of these indicators give us a feeling for the cost of food both for adults and children vis-a-vis their ability to pay for it. They also reflect the policy of the government to either produce meat over cereals, or export agricultural

produce from the country to help balance of payments problems. The infant mortality rate has been increasing throughout the period of the economic "boom" in Brazil. Bourne says that in "the 1960's in Amazonia the proportion of deaths was much higher than in Brazil: the death rate was almost twice as high, and much of that was caused by child mortality." (Bourne 1978: 42). Malnutrition in the interior of Northeast Brazil is similar to that in the Amazon basin. In the Northeast the infant mortality rate is about 250 per 1000 in the interior, but in some villages yearly rates are as high as 450 per 1000 (Sao Joao in Pernambuco). Likewise, the mortality rates are high primarily because of the death of children. Children to the age of 5 account for 67% of all the deaths in the interior of the state of Pernambuco (PIMES, cited in Clay 1979). Nor are these figures spread evenly across the population. For example, of the tenant families I spoke with in the interior of Pernambuco from 1976-78, none had fewer than 50% of their children die, while some had lost up to 90%.

Amazonia

The Amazon region covers about 3.5 million square kilometers which is about 42% of the national territory (Cardoso and Müller 1977: 19). Its 3.6 million people are about 3% of the population of the country, and give the region a density of about one person per square kilometer. Many of the people in the Amazon live in cities and towns. Although the official government statistics list the area to be over

40% urban, they include in that figure people living in settlements of only a few thousand individuals.

In the early 1970s roughly 1/4 of the land in the Amazon was owned privately and most of the rest was owned by the local, state or national government. Of those lands that were privately owned, 87% of the farmers owned less than 500 hectares, but this land accounted for only 10.8% of all the privately owned lands in the region (Cardoso and Müller 1977: 73). Other sources indicate that the average size of a fazenda in the region is from 18,000 to 19,000 hectares. In fact, SUDAM will no longer finance fazendas that are less than 25,000 hectares. Likewise, BASA (Bank of the Amazon) is using more than 90% of its loans to agriculture for the financing of cattle ranches. In the cases of SUDAM and BASA, these types of credit programs create few new jobs, while they contribute to the monopolization of resources that are being only extensively used. Thus, they discourage the growth of population, the development of agriculture and the distribution of income.

The Northeast

The Northeast contains roughly 15% of the total area of Brazil, 25% of the population and 13% of the income (Davis 1977: 40). In many ways the Northeast was as important in the development of PIN and the transamazonica as was the Amazon itself. The Northeast is considered the poorest region of Brazil. Of the nearly one million

infants born each year, one third die before the age of one. At present the economy of the Northeast is producign new jobs for only 300,000 individuals each year.

The type of development being sought for the Northeast through PIN or the Transamazonica was never going to attack the causes of poverty. Nothing was to be changed that was creating poverty, malnutrition, population pressure, or the decreasing fertility of the soils. Rather, some of the "produce" of this economically depressed region was to be transferred to another area of the country. As such, this type of development should be viewed more as a bleeding than a serious attempt to alter social conditions in the Northeast.

On the surface the Northeast was supposed to provide the labor needed for economic expansion into the Amazon valley. Initially, as many as 3/4s of all the workers on the construction companies were to have been from the Northeast, but in actual fact it seems that only 20% of all the workers came from that area (Bourne 1978: 69). Some employers said that it was a crime to move the Northeasterners into the Amazon, although it is doubtful that that concern actually prevented the use of Northeasterners since at least for 100 years they have been moving in great numbers to the Amazon valley without the financial incentives offered either by the government or the road construction companies. It seems more likely that the Northeasterners were malnourished, had diseases that the government did not want spread into the Amazon basin, were less resistant to new diseases, and

were not accustomed to working in construction companies or with large machinery (Bourne 1978: 69).

Not all the effects of PIN and the Transamazonica were related to the use of labor. For instance Bourne quotes a Brazilian official as saying that during the initial 1971-74 PIN financing, SUDENE (the northeastern regional development agency, the counterpart of SUDAM) stood to lose US$ 41 million from its budget for the National Integration Promgram (PIN) and the Transamazonica. That sum was equal to the total amount that SUDENE had invested in both the industrial and agricultural sectors between 1963 and 1969 (Bourne 1978: 78). However, the reaction of Northeastern states to this loss of revenues was not uniform, because the application of SUDENE funds had not been uniform. Prior to 1970, SUDENE had funded 883 projects, but Maranhao and Piaui, for example, had received only 18 and 24 projects respectively. Since these states were located closer to the Amazon, they did not feel this shift of funds would really hurt them. For a state such as Pernambuco, however, located in the heart of the Northeast and controlling more than its share of SUDENE funds, this shift represented yet another central government decree that reduced their power.

SUDAM (Superintendency of Development in the Amazon)

In 1966 SUDAM was created from the old Amazonian regional development agency, SPVEA. Originally, SUDAM was to have received

a minimum of 2% of the tax revenues collected in the nation and at least 3% of the state, municipal and city taxes collected in the Amazon (Cardoso and Müller 1977: 116). In addition SUDAM could lure investors to the region through tax-break incentive programs. 75% of all taxes to be paid to the national government could be written off if the company invested them directly in the Amazon region, while 50% of all taxes could be written avoided if they were invested in the Amazon region in projects that were partially financed by SUDAM. Further, any income made on this type of investment in the Amazon by private companies had a 50% tax reduction for 10 years, and those ventures starting before the end of 1971 had a 100% tax reduction until 1982 (Cardoso and Müller 1977: 117). In addition taxes for exporting produce and more importantly for importing machinery and livestock were reduced for those companies that had invested in the Amazon. All the company had to do to qualify for these incentives was to locate a headquarters in the region, remain competitive with other producers, and produce anything that had a market either in the Amazon or outside of it (Cardoso and Müller 1977: 118).

The information about SUDAM financed projects is not easily compared. Individual sources are incomplete and two sources can rarely be directly compared. However, from September 1966 to April 1969 SUDAM had financed 239 projects of which 123 were agriculture/ livestock and 116 were industrial. Prior to 1973 there had been 498 projects sponsored by SUDAM, and 368 had gone to Matio Grosso and

Para (Cardoso and Müller 1977: 154-161).* From 1967 to 1971, SUDAM approved projects involving approximately US$ 1 billion worth of investment which created 45,000 jobs. About ten percent of this money went to the service sector and the remainder was divided about equally between agriculture/livestock and industry. The average amount invested per job created was about US$ 22,222, but those jobs created on ranches cost about $31,800 (Katzman 1976: 453). The rate of labor absorption of these projects was about 9000 per year. This may seem relatively low when compared to the Amazonian labor force growth rate of 30,000 per year, but they are even lower when we begin to consider how many outsiders were drawn into the region since the beginning of SUDAM financing.** By September of 1976, SUDAM had approved 536 projects for the Amazon region. These projects were expected to create 70,518 jobs when they were all fully operational. There is no information concerning the monetary cost of each job created through September of 1976. If the rate was about the same as the previous period, it raises some serious questions. In a region where the average income when SUDAM started financing projects was less than US$ 200 per year, was it justifiable to spend so much to create so few jobs?

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*Aside from the livestock farms listed on the next page that received financing during this period, another use was for the purchase of tractors. Between 1950 and 1970 the number of tractors in the state of Matio Grosso increased from 50 to 3926. Thus, SUDAM is financing a labor extensive production system and giving ranchers the ability to reduce even further their labor needs (Sanders & Bein 1976: 598).

**In 1950 the population was 1.85 million, in 1960 it was 2.6 million and in 1970 it was 3.6 million.

National Integration Program (PIN)

PIN was created in June of 1970 to finance infrastructure in the areas of SUDAM (the Amazon region) and SUDENE (the Northeast). PIN was to be financed with Cr 2 billion in 1970. Future revenue was to come from taxes by skimming 30% off the top of all the money that could be invested in the AMAZON in lieu of paying Federal taxes, contributions and gifts from public and private firms, loans and grants from national and international financial institutions, and other sources. The first task of PIN was the construction of the Transamazonica and the Cuiaba-Santarem highways with colonization and economic exploration along the sides of each of the roads. The tasks were divided up in the following way: the Ministry of Transport was in charge of the road construction and river port work: the Ministry of Agriculture was in charge of colonization and land reform (here meaning sales of land and registration of clear titles); the Ministry of the Interior was in charge of irrigation schemes and Indian affairs; and the Ministry of Mines and Energy was directed to carry our topographical surveys.

The Construction of the Transamazonica

Construction of the Transamazonica (BR-230) began on October of 1970. The highway was to stretch for 5400 kilometers, from Joao Pessoa and Recife on the Atlantic coast to Boqueirao da Esperanca located on the Peruvian frontier. The aim of the roadbuilders was to cut a seventy meter swath through the forest in the center of which

there was to be a nine meter roadway, with seven meters being gravelled. Although only a pioneer road, from the beginning it was to be an all purpose, all season road. The government had decided that it could be further upgraded as the need arose. The maximum gradient was to be nine percent. Galvanized tubes were used to pass over the small streams while wooden bridges of one lane were constructed for the small rivers. The major rivers were to have ferries that would transfer vehicles from one side to the other. BR-230 was designed with curves and gradients to as to allow the environment to influence at least to some extent the final shape the road took.

> Although the TransAmazonica started in the northeast and would continue west to the Peruvian border the jungle section which was the focus of priority and publicity was of 2322 kilometers, between Estreito and Humanita. The stretch between Estreito and Itaituba, 1252 kilometers was started in October 1970 and finished in September 1972. The stretch between Itaituba and Humanita , 1070 kilometers, began in March 1971 and was finished in 1974. From Estreito to Itaituba was completed on time; the link between Itaituba and Humanita ought to have been opened in 1973 according to the original plan. Altogether eight construction firms were employed between Estreito and Humaita, all of them among the biggest in Brazil ...
> (Bourne 1978: 63).

Bourne reports that the cost of the Transamazonica was between US$ 51,000 and $60,000 per kilometer. Cardoso and Müller state that the original estimated of Cr$ 65,000 quickly rose to Cr$ 300,000 by 1973 (1977: 176-177). The estimated cost according to Fernando Moreis in 1974 were about Cr$ 7,000,000. per kilometer. Although Minister Mario Andreazza estimated that the cost of the Transamazonica was as

much as US$ 80,000. per mile the government has never offered a full accounting of the Amazon road building efforts. All of these estimates, are based on just the construction costs of the roads and do not include any of the cost for colonization or financing of commercial activities in the region.

In 1970 the road building aspect of the project was to have cost the government a total of US$ 77,000,000. By 1972, the official cost of the section running only between Estreito and Humita was estimated to cost US$ 86,400,000 by itself. Unofficial estimates of DNER (The National Department of Roads) and the New York Times ran as high as US$ 119,000,000. for this single stretch of road. This part of the road was not to have been completed for another two years, so it is likely that the cost ran even higher. Even with all these increases in costs, road construction and paving in the North of Brazil still accounted for less than 17% of the road budget for all of Brazil during the years from 1972 to 1975 (Bourne 1978: 67).

It is difficult to accurately estimate the real cost of the Transamazonica above the per kilometer figure which went to the lowest construction bidder. How much of the cost of construction is hidden in the various ministries budgets? How much money was spent by the Corp of Engineers budget within the army? Then there are the more general economic questions. What was the cost of spending so much of Brazil's reserves on the importation of oil and heavy earth moving machinery? What will the cost be of going into debt to build a

transportation network that will require the importation of more oil to run? What effect will the huge loans from foreign entities have on the future of the Brazilian economy? How have the Transamazonica and PIN program affected the staggering inflation rate in Brazil? Then of course there are the more difficult calculations -- how can the lives of the peasants and Indians in the region be valued?

Colonization

One of the primary justifications for the Transamazonica was that it would siphon off excess population from the impoverished Northeast. Aside from the workers that would actually be used for the construction of the highway (mostly from the Northeast), the government had hoped to resettle a number of individuals along the roads (3/4s from the Northeast) that were built into the Amazon valley. In August, 1971, government officials were estimating that 64,000 families would be resettled. By 1972 they were talking about 100,000 each year, with a total of 1,000,000 by 1980 (Cardoso and Müller 1977: 156). Henriques (cited in Davis 1977: 39) said that "By 1980, INCRA officials hoped, more than 5 million people would be relocated under this program along the margins of the new Trans-Amazon highway." Goodland and Irwin mention that the government was planning to settle 500,000 colonists in all and assumed that at least another 500,000 would come of their own accord. Katzman, on the other hand, suggested that 100,000 families were hoped to be settled between 1971 and 1974.

In actuality, he says, only 3700 had been transferred to the region by mid-1973 and by a year later, the colonization scheme was virtually abandoned as a failure (Katzman 1976: 457).

Estimates for the cost of the colonization program also vary a great deal. Pinto, in 1975, estimated that the government spent about Cr$ 32,000. per colono. A subsequent estimate per colono showed the price to be near Cr$ 50,000. (Cardoso and Müller: 197). In US$, the estimates remain fairly constant at about 3,000. per colono.* This figure is much lower than the cost of creating a job on a ranch (US$ 32,000), in an industrial project in the Northeast (US$ 12,000), or on the average project financed by SUDAM in the Amazon during this period (US$ 22,222). Only in traditional agricultural production were jobs created at an average expenditure lower than that for the colono (US$ 300). [All estimates of cost per job created come from Katzman 1976: 453.]

As of June 16, 1970, INCRA had a budget of US$ 333,000,000 from PIN for its colonization activities in the Amazon from 1971-1974. From 1972 onward, INCRA was allowed to sell plots of land of from 500-3000 Hectares. Land sales were not restricted to the strips alongside the highway. Funds from these land sales could be used by INCRA to sponsor other activities (such as colonization). From the outset, INCRA (by right of government ownership) controlled considerable land

*It should be remembered that SUDENE's colonization schemes prior to 1964, in the state of Maranhao, cost about US$ 18,000. per family and that only 1000 families were actually moved to that area from the Northeast

reserves. At first the maximum size plot that could be sold without approval from the legislature was 3000 hectares, but this policy was changed by 1973. The median size of a fazenda being created in the Amazon during this period was 18,750 hectares, and SUDAM no longer finances projects for cattle ranching that are to be on fazendas smaller than 25,000 hectares. Officials explain that this size is necessary in order to guarantee favorable conditions for profitable livestock ventures without harming the ecological system of the region (50% of all land area must be left in forest cover). Thus, the sale of larger farms by INCRA in conjunction with the minimum size needed for SUDAM finance contributed to the same type of monopolozation of resources and income that exists elsewhere in Brazil (Bourne 1978).

The colonization program, its goals and the mechanics of moving and relocating individuals, was a straightforward, clear approach to a highly complex problem. Originally there were to have been three types of settlements in the region -- agrovilas, agropolis, and ruropolis. The agrovilas were to have been located every 8-10 kilometers along the Transamazonica. Approximately 100 hectares was to have been used for the construction of the nucleated settlement. Each of the 50 to 60 houses built in this settlement would have a garden plot of from 20-50 meters by 80-125 meters. Each settlement was to have had a school, church, store, pharmacy, clinic and rural assistant supplied by INCRA. Each colonist was to be sold 100 hectares within five kilometers of the agrovila. The plots were to have

a narrow frontage directly on the road (500 meters) and were to have run inland for 2000 meters.

Every 50 kilometers along the road there was to have been an agropolis. Each of these settlements would have contained up to 500 houses within a 300 hectare site, and 140 hectares were to be kept unused. These towns were expected to have up to 2500 inhabitants, and each of the areas was to have had a high school, tile factory, stores, warehouses, and saw and a rice mill, bakery, gas station,* and radio transmitter.

The next type of settlement was to have been the ruropolis, which would have been located every 150 kilometers along the Transamazonica. These settlements were designed to be agricultural development centers, serving populations of 50,000 or more. Each ruropolis was to have a vocational college (and thus technical advisors), as well as wholesale and retail outlets for items needed in the area. In essence the ruropolis was to serve the administrative and commercial needs of each successively smaller settlement down to the last settler.

Within the initial terms of the agreement between INCRA and the colonists, INCRA was to pay for the transportation of the colonizing family from their point of origin to the ultimate destination. The colonist was to buy a plot of 100 hectares for a nominal sum at little or no interest. The land was to be paid for within 23 years. A

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*It has been two years since the state oil monopoly last delivered gas to Luiz Acco, located 800 miles west of Altimira. His pumps are long since exhausted and he now grows "rice, corn and mandioca in the jungle surrounding his isolated outpost." (Rohter 1979: A-15).

simple house was to have been prepared with the necessary basic utensils for the family, and two hectares of forest were to have been cleared (paid for by the government) by the time the family arrived. More financing was to have been available for deforestation through various agencies at a later date. The house was to have drinking water inside and electricity nearby for a possible hook up. The colonist was to be paid the region's minimum wage for the first six months in order to tide him over until he would have some of his own produce to sell. INCRA guaranteed a certain market with fixed prices. INCRA was to provide some of the hand tools, instruction for agriculture in the area, and seeds for the first years plantings. In addition INCRA was to provide literacy programs, including night schools for adults. The government was to provide medical and dental services for all colonist families.

Initial yields in the colonized areas were 1600 kilos of rice, 1300 kilos of corn, 1000 kilos of beans per hectare. These yields should be viewed with caution for they were produced on the best lands in the region. Further, these were the first year results and yields quickly fell off. At least 80% of the lands in the Amazon would have to be classified as "poor." Even so, the yields reported above are about three times those obtained in the Northeast with the use of organic fertilizers. It is easy to understand why there was considerable enthusiasm for the colonization project, particularly among the poor of the Northeast (Goodland and Irwin, 1974).

This major colonization program, barely begun, was effectively halted in 1974 by a switch in government policy.

> Finally, in 1974, INCRA's president, Lourenco Tavares de Silva, formally acknowledged major policy changes. INCRA, he said, was opposed to latifundios, but not to large enterprise in itself; and the colonization projects would be oriented toward a joint composition with the large and medium enterprises (cited in Cardoso and Müller, 1977, p. 181). By 1976, two presidential "expositions of motives," 005 and 006, authorized INCRA to regularize titles of up to 600,000 hectares and 3,000 hectares respectively for large and medium enterprises whose "paralyzation might hinder the economic development of the region" (cited in Santos, 1977). [Bunker 1978: 21]

After the announcement of this shift in policy the colonization of small farmers ground to a halt. Those settlers already in the region were forced to depend upon less powerful state agencies to fulfill the terms of the original arrangements with INCRA (such as credit, schools, houses, wages, seeds, tools and markets). Most of the settlers still did not have definitive title to their lands, and without this they were not eligible for any government credit programs and they could potentially be evicted from their farms.

The Ecology of the Region

Goodland and Irwin suggest that the tropical wet-forest of the Amazon is perhaps more clearly understood if we think of it as a desert covered by trees (167). They suggest that the Amazonian forest should be preserved intact until research reveals how it can be manipulated for a sustained yield. It may be more ecologically sound to import

food into the region from the South and the Center South than to try to produce it in the Amazon until more is known of the region (1974: 167).

It is known that at least 80% of all the soils in the Amazon basin are "poor." If cultivation is to proceed in the region it should first of all be in the cerrados of Central Brazil, or, failing that the riparian strip, varzea and savanna patches within the forest rather than the larger forest areas themselves. If the forest is used for any reason, it should be used in a way that will cause minimal disruption to the nutrient cycle and to the protective canopy. The economic canopy, they suggest, is much higher in value than literally tons of fertilizer per hectare. One ha. of forest protected soil releases 1 kg. in a year; stripped of its protective canopy the naked hectare loses 34 tons of soil (Goodland and Irwin 1974: 167).

Bourne, however, suggests that it may be the TransAmazonica disaster that will allow some of the Amazon forests to survive at least into the next century. "But it should be admitted that if, against all odds, the Amazon forests survive in recognizable form into the 21st Century it will be partly because the TransAmazonica programme sets off the alarm before the damage was overwhelming." (1978: 283).

Landownership and the Development of the Amazon

With the opening up of the Amazon to private investors,* it became common for the larger investors to own the best lands. This often leaves the less well informed and less able settler, to say nothing of the less politically powerful colonizers, caboclos or Indians, to struggle with difficult slopes or to be pushed into other marginal area -- in many cases areas that are not suited for the particular type of agriculture or hunting and gathering attempted on them.

Some of the larger farms, both private and public, national and international, are truly incredible in their vastness. Daniel Ludwig, for example, bought about 1.5 million hectares in 1962. By 1974 he had invested more than US$ 50,000,000. in Projecto Jari, S.A. He seems to have cleared about 175,000 hectares for pasture and forestry projects; products from both activities are destined for international markets. To date, however, the only enterprises from which he has actually earned income are a clay export works and a small experimental rice cultivation project.

The Fazenda Suia-Missu opened in 1962. It was originally owned by a group from Sao Paulo, but later it was sold to a group of

*This process appears to have been speeded up by the building of Brasilia. For example, Bunker says that between 1924 and 1976 nearly 7 million ha. of land were sold by the state of Para. 93% of those lands were sold between 1959 and 1964. The two largest estates, Projecto Jari at 1.5 million hectares and Suia-Missu at 640,000 hectares, were both purchased prior to 1964. (Bunker 1978: 47).

Italians and the corporation Liquigas. The original area occupied by this farm was 640,000 hectares, and the owners planned to have 130,000 head of cattle. Today the farm is 678,000 hectares.

Other large landowners in the Amazon basin are Codeara (600,000 ha.), vale Cristalino [VW] (140,000 ha.), the King Ranch [with Swift/Armour] (more than 100,000 ha.), Bruynzeel (500,000 ha.), Georgia Pacific (500,000 ha.), Robin MacGolm (400,000 ha.) and Toyomenka (300,000 ha.). Companies opening up fazendas in the north-east of Mateo Grosso and the north of Goias and Para are Anderson Clayton, Goodyear, Nestle, Mitsubishi, Liquifarm, Bordon, Swift/Armour, Camargo Correis,* Bradesco, Mappin, Electrobras, etc.

Many of these enterprises were designed to be cattle farms, so it is interesting to note the comparative rate of labourers employed per initial investment. In general, in the Amazon, it is estimated that one employee (in this case cowboy) can manage 250 head of stock. In these terms alone the cost of creating a cowboy job based on the going rate of livestock in 1976 would come to Cr$318,000. (This must be compared with the average cost of an industrial employee in those projects funded by SUDAM, Cr$ 180,000 or just 55% of the livestock jobs [Cardoso and Müller: 162]). However, to assume

*Camargo Correia is the largest construction firm in Brazil. Aside from winning bids on some of the major portions of roads in the Amazon, the company built the Manaus airport, the Sao Paulo metro, and various dams, roads and railroads. The number of employees increased by six times during the decade after the military takeover of the government. Profits rose 10 fold from 1969-74 (Bourne 1978: 64-65).

that the cost of creating a position on a cattle ranch is merely calculated in terms of the cost of purchasing the livestock needed to stock the ranch is foolish indeed. In addition there are the costs of clearing land, planting pasture, building corrals, fences, and many more. It is likely, in fact, that the other expenditures needed in order to establish a livestock operation are equal to if not greater than the costs of purchasing the livestock. So, the above estimate of cost per cowboy should be taken as a very low indication of actual costs for the creation of each position.

In sum, while it is unclear what might happen in the Amazon in the long run, in the short term, mining, ranching and timber interests are monopolizing the productive assets of the region without really creating jobs. This has the effect of increasing the wealth disparity within the region as well as of transferring large portion of profits to other areas of the country and world. While it should have been obvious from the outset (or perhaps it was), economic expansion into the Amazon has imposed class and property relations on areas that had been, to a large extent at least, free of them before. As Bourne says, "Ironically, the developed society which they [Brazilians] hope to build may end up remarkably similar to the one from which they are escaping." (Bourne 1978: 288).

There is another interesting aspect of the transfer of political and class relationships into the Amazon region before there has been any effective institutional development by the government.

Key landowners and corporations now dominate large areas of the Amazon in a way reminiscent of the Coroneis during the early part of the century. Due to the size of the region, the government has been forced to "sub-contract" much of its law enforcement along with its development policy to private companies or individuals -- this has met with predictable results.

Immigrants have improved their position to the degree that they have been able to find work, make use of the land, or get access to government services. In many cases, the conditions of the poor, or the services for them, have been subordinated by more pressing concerns of the government or private companies. While the road represented a symbolic effort that could be shown to others, it rarely improved the condition of the poor. The types of infrastructure that were needed to do that would have cost a considerable sum (but by comparison to the road or to each cowboy position?), and would not have provided such an immediate or dramatic statement about the tangible effects of development in the Amazon (Bourne 1978: 274-276). The government's approach represented a side stepping of social change -- but this side stepping was really filled with social implications for poor Brazilians, not just in the Amazon. Migration was seen as a cheap investment in social peace in other parts of Brazil.

We must begin to analyze the type of landownership pattern that is developing in the Amazon, in light of the fact that the Transamazonica highway project represented an attempt by the federal government to divert attention from the Northeast during the first

period of potential crisis in one of the most conflictual regions prior to the military takeover of 1964. Conflict in the Amazon is diffuse, scattered and in most instances predetermined. Further, conflicts in the Amazon are not as publicized as are ones in the Northeast. An example of the type of conflict that goes on, usually unnoticed, came to the attention of the President when he visited Projecto Jari, S.A. (owned by the American Daniel Ludwig). At the time of Medici's visit, the workers of the project had prepared signs which stated that they were virtual slaves on the farm and could not leave. They begged the President to intervene on their behalf. In the vast expanses of the interior it seems likely that this type of labor relationship would be the rule and not the exception.

Cardoso and Müller (1977) make the point that although many of the large cattle estates and road building projects in the Amazon actually give permanent employment to few individuals, they depend upon huge amounts of temporary labor to become established. In their book, they cite the four leading employers in the Amazon area -- Projecto Jari, Suia-Missu, the Transamazonica and all the SUDAM projects -- as examples of the difference between permanent positions created and the number of laborers needed to create them. In these four instances 16,450 permanent positions were made, but an additional 91,800 people were temporary employees for short periods in the year. In other words, for every permanent worker with a more or less secure position and full time employment, there are 5.6 temporary workers.

These temporary workers are often hauled for long distances and charged for that trip as well as high prices for the food that they eat or the accomodations that they use. In most cases these financial arrangements with the temporary workers are not explained to them before they leave their homes, and in some cases the workers are deliberately lied to. In either case the temporary workers often leave their jobs with little if any of the money they had hoped to make. If we compound this problem with the knowledge that the landowners and the companies are in many instances the only form of law and order in the area, we have a greater understanding of the lack of options open to temporary workers to air legitimate complaints. For example, the only outsider to visit the Jari Project recently was a newspaperman who claimed that his plane was forced to land due to engine trouble. In this way he was able to speak briefly with a few workers. Aside from this brief encounter, all other outsiders have been kept out of the region.

Problems Encountered with the PIN and Transamazonica

PIN and the Transamazonica were not successful attempts at developing the Amazon region. In general terms, they did not help the Northeast and they did not give employment to Northeasterners. They diverted resources wastefully, particularly after the price of oil tripled. Many companies were lured to invest in the Amazon region because of the tax incentive programs, however, it was a different matter to get these companies to invest money that the Brazilian government would not have taken anyway. SUDAM investments were

capital intensive in the same way as those of SUDENE, and these investments encouraged the development of large landholdings. The ecology of the region, while rich when left untouched, proved to be very fragile in the face of pasture, forestry or intensive agriculture projects. The attempts of the government to make sure that 50% of the forest will be left untouched are already being undermined. Finally, the hopes of more easily utilizing valuable resources (whether known or not) through the construction of a road became more difficult with the rising prices of oil.* Also, there had been no thought as to how the resident population in the Amazon would fit into these development schemes. The end of the case study deals with the Amerindian and Transamazonica question as a separate problem for the Indians were never taken into consideration in the planning or implementation of this project.

The lack of knowledge of the Amazon region both prompted the optimism of the Amazonian development scheme and led to its failure. Rohter says:

> The Transamazon has also felt the consequences of the hasty construction and inadequate planning that preceded its opening. Air photo and radar surveys

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*Most of the mineral resources that the government hoped to exploit needed to be transported in bulk for refinement. In many cases, they would still have been too heavy to transport economically overland. It made more sense to use the existing waterways, where the weight of the cargo or its bulk did not matter. One business man in Porto Velho complained that he had a piece of equipment shipped from the US to Manaus and he wanted to bring it to the site by truck. However, he found that the highway simply could not support the weight of the equipment so he had to bring the piece in by raft (Rohter: A-15).

> published by the Brazilian government last year revealed that much of the Transamazon passes through low-lying swamp land that, in the words of the official report, "does not offer favorable conditions for the planning and execution of highway pro projects." (Rohter: A-15).

In addition, initial yields from test plots on the best lands in the Amazon also contributed to a false optimism about the sustained fertility of the entire region.

Perhaps the most devastating event contributing to the failure of the Transamazonica were the increasing oil prices after 1973. With an oil import bill of over US$ 4 billion (the largest in the Southern Hemisphere), Brazilians discovered that they simply could not afford to continue a development program based on a road system that would be little used and expensive to maintain (Rohter 1979: A-15). The quadrupling of oil prices rendered the highway impractical even before it opened, and price rises since have crippled its usefulness even further (Rohter 1979: A-15).

By 1979, the Transamazonica, as originally envisioned, has not been completed. Many of the stretches that were finished are falling into decay and disrepair. Upon taking office, Geisel immediately scrapped the PIN program and replaced it with the Polamazonia Program. This new program proposes the creation of 15 plots of development scattered throughout the Amazon in the most favored locations. One of the priorities of the Geisel government is the 11 million kilowat Tucurui hydroelectric power plant. If, or when, the dam is completed it will cover a 150 mile stretch of the Transamazonica

between Altimira and Maraba. As a result, the Transamazonica is seen even more as a costly "boondoggle" or "white elephant." The nation's largest newspaper, the Estado de Sao Paulo, recently labeled the road "the longest, poorest, and most useless highway ever built on the face of the earth." (Rohter 1979: A-15).

The immediate costs of Amazonian development appear to have been born by three groups; the Amerindians, the caboclos and the poor immigrants. Indians have died by the thousands from disease and cultural trauma rather than from cruelty. Their present situation is insecure and questionable. The peasants have been elbowed aside. They have had the lands that they legally occupied taken away from them because they did not know how to use the legal system and because the legal system appears to be in the hands of those pushing the caboclos out. While some prices paid for goods in the region have decreased as a result of the increase of development activity, competition for natural resources and jobs has increased. Riverine culture has been destroyed or at least certainly altered. All inhabitants are becoming more dependent upon a money economy. In some ways, the poor immigrants have suffered the least. They are probably not much worse off than they were in their previous place of residence. Although their hopes of prosperity must have been quickly dashed, they are used to the types of exploitation that face them in the Amazon basin.

Indians in the Amazon

The number of Indians in Brazil now or at the time of initial contact is very difficult to assess. Some estimates indicate that there were perhaps as many as 5,000,000 at the time of the initial contact with Europeans and that the numbers have been more or less steadily decreasing over the centuries. Present estimates suggest that as few as 50,000 Indians may still exist in Brazil although it is possible that up to 100,000 still survive.

Ribeiro suggested that there were 500,000 Indians by 1940, but that by 1957 the number had diminished to 100,000. In 1900 there appear to have been about 230 tribal groups, but by 1957 Ribeiro suggests that only 143 remained. Of these 143 groups there is significant information on only 109. At least half of these 109 groups are represented by only a few hundred individuals or less.

No definitive map exists that shows which groups of Indians will be disturbed by the Highway programs in the Amazon basin. Goodland and Irwin have suggested that the road construction programs in the Amazon basin will bisect 96 of the total of 171 known tribal locations. Of the 96 tribes to be so affected, at least 45 belong to groups that rarely if ever had previous contact with whites. In addition there are 11 tribes with fewer than 100 people each. Biologists feel that this means these groups do not have enough reproducing couples to counter the number of deaths that will result from contact with white society (Goodland and Irwin 1974: 192). In a later article Goodland and

Bookman suggest that 90 percent of the indigenous societies of the area under consideration for roads will be "violated" by such construction (Goodland and Bookman 1977: 379).

In essence there is a very real possibility that the Amazonian highways will result in exterminating entire Amerindian tribes. The proposed highway clearly takes precedence over the constitutional rights of tribal peoples in the government's view at this point in time. As a result, FUNAI (the government agency charged with protection of the Indian) has allowed itself to degenerate into acting as a buffer between highway crews and the tribes whose lands are violated (Goodland and Bookman 1977). In actual fact FUNAI has been powerless to oppose the invasion and occupation of Indian lands. None of the 11 reserves planned by the government to protect the Indians found along the Transamazonica highway, for example, materialized as viable settlements (The Economist 1976: 37).

The case of BR 080 is illustrative of this problem. BR 080 runs between Xavantina, Mateo Grosso and Cachimbo, Para. Its design had it running through the middle of the Xingu Indian reserve, the largest Indian reserve in Brazil. Over the protest of both Brazilian and international anthropologists and ethnologists, the director of FUNAI endorsed the route through the park, putting an end to the controversy. Soon after, the government annexed more than 8000 square kilometers that were located on the northeast of BR-080 (Goodland and

Bookman: 378).* Although the government compensated the reserve by adding more than it had taken onto the southern side of the reserve, these new lands were different. The lands that had been taken from the reserve were wooded and supported a hunting and gathering form of subsistence, while the new lands were savanna lands. This, in effect, pushed a greater number of Indians onto the same wooded lands for hunting and gathering. Worse still many of these groups had been enemies in the past. Thus, conflict over a shrinking resource base was exacerbated by previous conflict between groups.

Part of the problem that the Indians of Brazil face is that they are to be protected by an arm of the Ministry of the Interior. Unfortunately, the Ministry of the Interior is also involved in the various development projects that are occurring in the Amazon. Even when the Ministers change, the situation of the Indian does not seem to be improved. In 1974, the then Minister of the Interior, Rangel Reis, said:

> We are going to create a policy of integrating the Indian population into Brazilian society as rapidly as possible. We think that the ideals of preserving the Indian population within its own habitat are very beautiful ideas, but unrealistic. (cited in The Economist 1976: 38)

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*Although it has not been "proven," government officials at the time said that the lands taken away from the Xingu had already been sold to Camargo Junior (the Director of the Central-West Development Agency, and one of the biggest landowners in the Xingu area of Mateo Grosso), Cavalcanti (the Minister of the Interior who is technically the boss of the Director of the Brazilian Indian Service, and a large landowner himself), and "an American Corporation whose identity remains unknown." Both Cavalcanti and Carmargo Junior have consistently opposed the work of the Villas-Boas brothers in the Xingu (Brazilian Information Bulletin, January 1973: 9).

The Minister of the Interior in 1970 (on August 21) had said that, "We will take every care with the Indians. But, we will not permit them to impede the advance of progress (cited in Goodland and Irwin 1974: 177). Following suit the Director of FUNAI had said at that time that "Indian programs shall obstruct neither national development nor the axes of penetration for the integration of Amazonia" (Goodland and Irwin 177). The Superintendent of Development of the Central-West said that "The huge grasslands which compromise part of the Xingu National Park can be rationally utilized by establishing experimental ranches in which aboriginals themselves will be hired for farming and for field labor." (Goodland and Irwin 1974: 178). The implication of the superintendent's statement was that the lands should be leased to someone else who could then use the Indians to raise cattle and agricultural goods on their own lands, an idea not without considerable historical precedence in the Western Hemisphere. By 1973, and overriding the wishes of the Brazilian Congress, the President of Brazil passed into law the long awaited Brazilian Indian Statute which made it official FUNAI policy to lease Indian lands. President Medici claimed that the prohibition of "the leasing of subsoil wealth contained on Indian lands would 'impede the commercialization of products possessed by Indians, and make it impossible for an interchange between Indian tribes and the national community.'" (Brazilian Information Bulletin Spring 1974: 16).

The Brazilian Indians were not only not taken into consideration in the planning and implementation stages of PIN and the Transamazonica,

they have been consistently overlooked ever since. When the Indians had to be dealt with, they were hindering the advance of development projects and ways had to be developed to allow these projects to continue unimpaired. Very little has been done in the Amazon to specifically benefit the Indian population. In 1970, with the announcement of the Transamazonica and PIN already made, the budget for FUNAI which was to help the agency "cope" with all the construction activity and complications resulting to the Indians came to roughly US$ 10,000. This is perhaps one dollar per Indian that might be affected by the construction activities (Goodland and Irwin 1974: 176). It was for budgetary reasons, at least in part, that FUNAI's main activities centered on offering trinkets to Indian groups about to be contacted by the highway crews. In this way they tried to convince them to go to parks or reserves away from the road construction crews and the anticipated colonists. Because of the small amount of finance given to FUNAI, they could not hire well trained employees. The agency rarely had enough food to last them for the total period they were in the areas of the road crews, and they frequently did not have vehicles or more frequently the money needed to purchase fuel. For these reasons, the FUNAI teams came to depend upon the road crews, and the more they came to depend upon the crews the closer they stayed to them. Contact with Indians was often little more than a half a day's journey or merely a few hours from the main construction crew. For these reasons, Indians were exposed

to a greater number of whites (and their diseases), and Indians were uprooted much more quickly than they needed to be.

Many of these things did not need to have happened to the Brazilian Indians. The Brazilian Constitution certainly gives adequate protection for the aborigines:

> The Lands inhabited by forest dwellers are inalienable as determined by federal law; permanent possession belonging to them, the exclusive use of the natural resources and of all the advantages therein contained being recognized as their rights. Laws of whatever kind, having the objective of domination, possession or occupation of lands inhabited by forest dwellers, are declared null and void. (Goodland and Irwin 1974: 178)

It would seem that with this passage the government had a constitutional mandate that should have protected the Indian, however, if we read further in the constitution we note that:

> The nullity and voidness treated in the previous paragraph does not confer recourse to any action or indemnification by occupants against the government or the National Indian Population. (Goodland and Irwin 1974: 178)

It was within this clause that the government was able to cut through the middle of the Xingo Reserve and then take lands.

Although FUNAI was given the mandate to locate Indian groups, make contact and persuade them to move to reserves or parks, many time attempts at contact failed and the Indian groups who were also being pressured from other sides. In sum, the uncontacted Indian faced malnutrition, disease, killings and increasing scarcities of foodstuffs.

If we look for a minute at the Indians that did opt (or were duped) into moving to a reserve, we also find malnutrition, disease, killings with other Indians, and pressure on a confined piece of land. Nomadism was discouraged as the Indians had legal title to only a specific piece of land. Further, the relocation of a hunter/gatherer group from one area which it knows intimately to an area where the flora and fauna are different will force the Indians to become dependent upon food supplies from the government, will force them to learn to farm or tend cattle or will force them to seek employment. The government is not likely to provide food supplies over a long period of time. Investment in cattle is too expensive for Indians who do not have any credit sources available, and agricultural production at a more than subsistence level is also difficult without credit, so in many cases or at least in the future it will be increasingly common for Indians to seek employment from other individuals, usually non-Indian and probably in many cases individuals who are leasing Indian lands.

Employment for Indians means a taking away of their independence as well as their ability to provide for their needs by hunting. As they become more tied to the money economy where store food is expensive, they spend more of their time either working or attempting to figure out ways of making more money. As this happens less time is spent teaching the children about the life of hunting and gathering. Certainly the schools will not pass on this information.

Aside from losing their traditional lands and being confronted with the shock of which society and the trauma of losing their own cultural identity, one of the primary problems facing Indians that either have not been contacted before or that have had only limited contact with Brazilian society is disease. In the following list, I have given detailed accounts of the declines in various Indian groups after their encounters with white diseases during the early seventies. These are the figures from only two sources; the list could be elaborated. It is important to distinguish between the Indian groups that have just been contacted and those that have been settled for some time, having had time to recover from early decimation by disease. It is these latter Indians who are experiencing population growth at this time.

Population Figures For Some of the Tribes Encountered By the Diseases of the Developers of the Amazon Basin

Name	Period	#Before & After	Source
Jandeavi	1972	76 to 60	Davis 1977: 67
Mayuruna	1973-1976	2000 to 400	Bourne 1978: 243
Yanamamo	1973-1975	82 to 66	Bourne 1978: 247
Nambiquara	1968-1975	59 to 34	Bourne 1978: 249
Nambiquara	1968-1975	56 to 26	Bourne 1978: 249
Parakanas	1970-1972	150 to 82	Bourne 1978: 233
Asurini	1971-1972	c.90 to 62	Bourne 1978: 2-3
Kreen-Akroe	1972-1973	c.300 to 135	Davis 1977: 72
Kreen-Akrore	1973-1975	135 to 82	Bourne 1978: 233-234

Two passages from Shelton Davis' book, Victims of the Miracle, give an idea of the types of problems faced by Indians in sustained contact with the crews on the Transamazonica.

> In November 1971, a Brazilian physician named Antonio Madeiros visited a Parakanan village that was located 38 kilometers from the Trans-Amazon Highway. Madeiros reported that a "pattern of promiscuity" existed between outsiders and the Indians. In his medical investigations, Madeiros discovered that thirty-five Indian women and two FUNAI agents had venereal diseases. In addition, he found that eight children in the village had been born blind, and at least six others had recently died from dysentery. To make matters worse, in February 1972 another influenze epidemic struck the Parakanan tribe. This time a team of doctors was rushed to the Parakanan village, but without sufficient medicines or supplies they were of little use and several more Indians died. (Davis 1977: 67)

and,

> Since their pacification and resettlement, the APS (Aboriginal Protection Society) team reported, these Indians had sold their cultural possessions to outsiders in exchange for guns and ammunition and were living off the dole of highway workers along the Trans-Amazon Highway. Most revealing, the population of the Parakanan had been reduced to eighty persons and there was every indication that their culture was rapidly being destroyed. (Davis 1977: 68-69)

Another problem that will become more difficult for the Indians in the near future relates to their lands. While the government policy is designed to give land to colonists only to 100 kilometers on either side of roads and while the colonization programs appear to be stalled for the time being, it is not likely that there will be no future colonization attempts in the region. At that time, the problem of Indian land rights will be confronted once again.

The immediate needs of the Indians in the Amazon are medical attention and adequate protection of their land rights. Only after

meeting these two conditions does it make any sense to speak of integration in a meaningful way. At that point, however, it is necessary to recognize the Indians as a rightful recipient of <u>at least</u> some of the beneficial development efforts going into the Amazon.

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