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## IN THIS ISSUE

HUMAN RIGHTS IN AMERICA

TECHNOLOGY AND RURAL DEVELOPMENT

"WORLD BANK AND TANZANIA" REVISITED

THE STRUGGLE TO REINSTATE NGUGI

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OPPRESSED OF THE WORLD UNITE!  
YOU HAVE NOTHING TO LOSE BUT YOUR CHAINS!  
YOU HAVE A WORLD TO WIN!

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Views expressed in this issue do not necessarily reflect the  
views of the Youth Organisation University Branch and are  
essentially those of the authors.

## ABOUT THIS ISSUE

This issue marks both a continuation and a discontinuation of elements of previous themes in our issues. The question of technology has again been focussed, this time with a marshalling of empirical analysis of the actual position of the context of technology and rural development in Tanzania. Dr Nkonoki's paper, based on various researches being carried in the Institute of Development Studies and Tanzania in general, should throw clear light to those who require specific and actual presentation of the situation as it is, rather than the broader theoretical issues surrounding the question of technology as a whole.

The paper on Human Rights in America by an American progressive writer should be looked at in depth by all interested in the real situation of human rights under the rule of finance capital. Since the Helsinki Conference of 1975, it has become customary for the human rights charge to be levelled at the Soviet Union, under the so-called "Third Basket" question in the Conference on Security and Co-operation in Europe. Still, this imperialist concept has not continued unnoticed. More and more, the forces struggling against imperialist domination and terrorist comprador rule are identifying human rights with bread and shelter for the broad masses. This has already led to a number of important victories in various parts of Africa, Asia and Latin America. The situation of human rights in the United States itself, the extent to which the military-industrial complex is a harbinger of human rights should be well documented in the paper.

The previous paper, in our issue No. 39, concerned with the loans of the World Bank to Tanzania, and its position within global imperialism exploitation, led to a debate in the Faculty of Law. In fact it was on the basis of its earlier or authentic dissertation form, an extract of which was offered to the Southern African Universities Social Sciences Conference and which we published. The questions were raised by a former senior lecturer in the faculty, David Williams, and replied to by the author of the paper, Hawa Sinare. We publish the correspondence along with a short comment, since "Maji Maji" is not neutral to the theoretical and ideological implications of the debate.

Lastly, we include a short note on the struggle to reinstate Kenyan patriotic playwright and novelist Ngugi wa Thiong'o. The circumstances are explained in the note itself, and in Ngugi's article which follows.

HUMAN RIGHTS IN AMERICA:  
PAST AND PRESENT

By Phillip BONOSKY

If you were to take a trip around the United States today and a stop at the generally neat little cemeteries located usually just beyond the outskirts of these little American towns, you will almost inevitably find one or two, perhaps even more, modest grave mounds, still conscientiously decorated with fresh flowers and invariably a tiny American flag.

Not all the graves have stone monuments yet. They have "markers". And on these markers you will find the following information (the names vary but the dates hardly at all): "John Smith, 1949-1968."

Not far off from this grave, even perhaps in the same family plot, you might just as often find another grave, this one with faded or no flowers, at all, but it most probably now has a headstone. But on it, too, you will find nothing more than "John Smith, 1932-1951". And there will also be an American flag.

The boys buried in both graves, though one was born much earlier than the other, are about the same age, 19. Their markers or tombstones will be simple and extraordinarily uncommunicative, but eloquent in their lack of eloquence. Those tombstones will contrast to the tombstones in this or other cemeteries, of an even older soldier dead, whose brief life statistics will be followed at least with the words; "He died for his country".

But you'll search in vain for that legend on these newer graves. Sometimes it's possible to find another one altogether: "He died for nothing." And in those contrasts between an older and a younger soldier dead lies not only a bitter change in the nature of their tragedy but they reflect a change in American social consciousness which, though it does not take organized political form, nevertheless accounts for the fact that the noisy official American campaign in behalf of "human rights" which fills the columns of the newspapers and takes over the eye of the TV, does not arouse a corresponding support for it, no popular drive, from among the people.

This political fervor emanating from Washington is a manufactured product, and it is recognized as such by an American who has been taught since childhood that truth is the same thing as publicity, and if it appears on TV it is "real", or at least has social (i.e. ruling class) power behind it. And so, more or less, this is what they believed, that the war in Vietnam was a TV performance with the same impact as a Hollywood film--until their sons came home to them in a casket from a war that really existed, was fought not by actors but by their own children, who were really killed.

Over 50,000 such youth were killed, in fact. Over 100,000 were wounded, some crippled for life, and over 800,000 were otherwise profoundly scarred by it--as boys who ran away to Canada, as draft-resisters who went to prison, as deserters, as mutineers. Parents had seen their sons go off to Vietnam as hardly more than boy-children, whose home upbringing had been religious, or in any case, "proper". There in Vietnam these boys had learned to buy prostitutes with a chocolate bar, contract social diseases, become addicted to drugs, and, after killing a "slope" learned how to cut off his ears and bring them back to their superior officers in order to make the official "body count".

And yet, despite the enormity of it, despite the universal knowledge that the Tonkin Bay "incident" which was used as the pretext to involve America massively in the war was a political forgery, nobody is "guilty"

The author is a progressive American writer and publicist. This article was first printed in the monthly journal of political analysis, International Affairs, No 5/1978, Progress Publishers Moscow 1978

of those deaths and those emotionally and intellectually destroyed, at worst the only thing that is officially admitted about the war left behind such an heritage of human wreckage, is that it was a "take". Nothing more.

But the reason why Arthur Goldberg's protestations at Belgrade, that he had discovered violations of "human rights" in the socialist world, sounded so hollow in America (not to speak of the rest of the world), raised no echo of support among the people, is because these thousands dead in these neat little cemeteries all over the country would have risen from their graves in great derisive laughter if they had. In any case, there is hardly an American who doesn't know some Vietnam veterans returned from the war, who is unemployed, psychologically crippled, or drug addicted.

They know that a monstrous crime had been committed on them, that they had been witness to a massive denial of the human rights of their sons, both those dead and those who survived, and that long before America can re-appear on the world stage as a "born again" moralist pointing an accusing finger at the way others live, it must settle accounts with them, these profoundly wounded Americans who guard these little American graves. And to do that there must be a more honest definition of what exactly constitutes "human rights", which would also include making clear exactly when a government commits a crime, or even what a crime is.

Let's go back almost a hundred years-to 1890. December 29, of the memorable year, the American cavalry captured some 300 Indian men, women and children, sealed them in a ring of steel and then methodically, in same spirit of Lt. "Rusty" Callow almost 80 years later at My Lai in Vietnam, cold-bloodedly murdered them.

The perpetrators of this massacre were not dragged before a court and punished for their crime. On the contrary, no crime was admitted, instead of punishment the men involved in the blood-letting were awarded Congressional Medals of Honour and were extolled in the press which looked upon the massacre as the "end of the Indian problem".

For generations Americans had been taught that the "only good Indian is a dead Indian", that Indians were heathens, whose culture was of no importance to any white man, and whose fate as a people was sufficiently taken care of by herding them all into "reservations" (i.e. concentration camps) where they lived marginal lives at the edge of poverty, their development stunted if not altogether destroyed, and their consciousness of themselves as a proud people lost in the sea of American callousness and indifference. To this "native American" is classified as the "ward of the government, but in fact, it is far more the "ward" of a single governmental bureau--the Bureau of Indian Affairs (BIA). In any case, a "ward" he is not quite a child, nor a retarded adult, but not a full-grown human being either.

Was a crime committed? Were the human rights of an entire people violated?

It took the appearance of revolutionary forces in the world, particularly Marxists, even to pose the question correctly--even to be able to suggest that past crimes are not sanctioned by the passage of time. Although it's not possible to punish the actual killers of the Indian people it is possible to deprive those who benefit from the earlier plunder from continuing to profit from their plunder. The "human rights" of the Indians stolen in the past have never been restored.

It was this understanding of their own history, which was brought focus for them by the revolutionary times--by the great upsurges in the colonial world and by the Marxist understanding of what they meant--that inspired the present generation of Indian youth to demand, not "concessions"

from a government bureau, but a full restoration of their historic rights, of their "human rights".

Wounded Knee in 1890 did not "settle the Indian problem" by eliminating the Indians. Some survived. And in 1973 the second battle of Wounded Knee broke out, and again, 200 to 300 federal troops and the FBI as well, all armed to the teeth, and led by a man who boasted that he intended to "change the life-style of the Indians" (i.e. kill them), drew another steel ring around the little Catholic church in a small patch of desolate land in South Dakota, part of the Pine Ridge reservation, where a handful of the Sioux of the Oglalla tribe again stood at bay like their grandfathers before them and again fought them in what seemed like a hopeless last-ditch battle.

This time, however, the world was watching and in the 90 years between the first battle of Wounded Knee and the second battle of Wounded Knee, a fundamental change had meanwhile taken place in the world, and the world (and the Indians themselves) hailed the second battle of Wounded Knee as the opening battle for their national survival and growth, not, as it seemed in 1890, as the end of themselves as a people.

But how did the "government" see it? Again, in 1973, as in 1890, the "government" saw no crime being committed, and no instance of a whole people, or even an individual, involved in "human rights".

Its reaction, its policy, was put by the then Secretary of the Interior Rogers C.B. Morton, who declared: "There is no way I or any other Secretary can undo the events of the past", and then he launched into a diatribe against the leaders of the American Indian Movement (A.I.M.) who had been trying to undo the "events of the past" in the present as "renegades...youthful adventurers...criminals...the bloody past is their banner...". True, he admitted, unemployment among Indians was "high, very high, about three times the national average". But that, he added, was due to the "fact" that the "Indian worker is not where the work is.. he does not have the skill required--part of it is his own lack of motivation. The road of least resistance is all too often not to work or go out and seek a job." But, he concluded piously, "My prayer is that soon he will sit at his table and be thankful for the bounties of this land--his land--our land.. I want his heart to swell with pride that he is an American and that for him there is an American dream".

So, after 200 years of burning, killing, pillaging, destroying, corrupting the American Indian, wiping some tribes entirely off the face of the earth, and reducing others to mere shadows of their former selves, all that the American government, in its majesty, can offer today's Indians is "a dream".

Meanwhile, while the "dream" remains in the future the present is a nightmare. The jobs the Indian is "too lazy" to take are the marginal, minimal-paying jobs, dead-end jobs, which no white man will take. The Indians' life-span is about half average life-span of a white American, and he is prey to disease, alcoholism.

But, though the once "proud Indian" has been reduced to poverty, humiliation and the loss of his cultural heritage, none of this amounts to a deprivation of his "human rights". No crime--no criminal.

The whole world is familiar with the history of enforced slavery of the African people in America. In fact, legally they were not "human beings", they were property, owned and even the noblest of the American bourgeois revolutionaries of the late 18th century felt no more than a twinge of conscience even as they framed the "Declaration of Independence" in which they justified their revolutionary action because "all men are created equal", every man has a "natural" right to be free, and so saying, they broke the bonds from their own hands as they simultaneously forged the bonds on the hands of their slaves.

This was justified as the protection of property. And in this action lay the paradox which would grow from what seemed nothing more than a natural "right"--a man's right to his property--to the Frankenstein monster of history which did not stop at enslaving Blacks but enslaved whites in the guise of "free workers", as well, and continued to enslave Blacks even after they had ostensibly been emancipated.

Political freedom--the right of the ex-slaves theoretically to vote, hold office, publish newspapers, etc.--did not ensure these rights in fact. For although the body of the ex-slave was "free", in fact his need to exist forced him to sell his body all over again into a new form of bondage that differed formally from his previous form of bondage, but in actual fact did not differ in essence.

In the hundred years of struggle that followed emancipation for the Blacks, it became clear that "freedom" was not equal to political freedom, such as it was, but to owning property. Even if, in the most ideal sense, every adult Black had dutifully voted at the polls (though, in fact, he was not permitted to in the South), and even if every Black child had industriously applied himself to his schoolbooks, saved his money and shunned every vice, still the fact would have remained that if he did not also get his hands on property--and for Blacks this was next to impossible--then he still remained no more than a supplicant outside the doors of privilege (i.e. freedom).

Two hundred years after the Declaration of Independence announced to the world that "all men are created equal", and over one hundred years after a bloody war was fought to free that one-tenth of the population which, for some inexplicable reason had been "forgotten" and left in chains, here, today in 1978, is what 200 years of "freedom" have accomplished for the American Blacks: "Their eyes are bleak. Some strutting down the street, speak with false bravado. Others stand listlessly on street corners speaking in monotones of what they think being an adult is like. Most can barely read or write. They lack good work habits that should have been built into their educational experience. They are 17 to 22 years old. The majority of them are minority (i.e. Black or Hispanic--P.B.) youngster. They are a lost generation". (Horace W. Morris, Executive Director of the New York Urban League, New York Times Feb. 2, 1977).

Here is a portrait of the "winners": "The idea of a 15-year-old driving a \$12,000 Mercedes-Benz sedan or placing \$500 and \$1000 bets on schoolyard basketball games boggles the mind. That hundred of youngsters are making that kind of money from the narcotics trade is appalling...."

Perhaps you think that these children are the worst in the ghetto backward, uneducated? No: "The children involved in this deadly business may be the cream of the inner-city youth: they are recruited precisely because they are bright, resourceful, courageous and loyal. They have grown up in communities where juvenile unemployment is estimated to reach 65 per cent..." (New York Times, May 1, 1977).

In New York City, in 1975, a typical year, 54 youths under 16 were arrested for murder. There were 5,276 arrests for robbery and 1,240 were charged with felonious assault; 173 were arrested for rape and 125 for sodomy. Any day in New York City, from 80,000 to 100,000 children are truants from school.

Albert Shanker, head of the teachers union of New York City, declared publicly some years ago that the New York public schools produced "functional illiterates" who were flung on the labour market--or more correctly, on the unemployment lines--every year with less and less capacity to cope with the demands of a highly sophisticated technological industry.

Over a hundred years after "emancipation" the average income of the Black American (and of other minorities) stands at less than 60 per cent of the average white worker's income. The Black worker is more likely to be unemployed, undereducated, and in his general standard of living, fall far below the level at which most employed white people live.

And, 200 years after the Declaration of Independence, a presidential commission, appointed by President Johnson to look into the causes of the great urban upheavals in 1968, when 100 towns and cities went up in flames, came up with the dismal finding that "our nation is moving toward two societies, one black one white--separate and unequal."

But, though there had been monstrous oppression for centuries, still, "perhaps" in individual instance, like the case of the Wilmington Ten today, there were no grounds to charge that "human rights" were denied by government to the Blacks, they were not forbidden by government to use the means at their disposal to petition government, act politically to change things, and to publish and otherwise plead their cause. So no crime--no criminals.

The Declaration of Independence had included a "guarantee" that seemed, at the time, not only very normal and logical but beyond question. That "guarantee" was that every American citizen would have a right to his "property", to the protection of the state in the ownership of his property. In fact, only property-owners had the right to vote and to hold political office in early post-revolutionary times.

"Property" in the pre-monopolist era meant what one literally personally owned: one's house, one's business, factory, etc. Neither the Declaration, nor the Constitution, nor any of the early American bourgeois theoreticians envisaged monopoly, nor its later monstrosity, the conglomerates of monopoly-capital, the multi-national corporations, in short, modern imperialism.

And yet, to this very day, the ownership, through interlocking directorates, etc., of vast corporations that control the lives, not only of Americans but of people far from America, is still equated with the ownership of a country-store, of a boarding house, a farm, a carriage repair shop, even of a textile mill owned by a single family, or a ship that plied the seas. The individual farmer, fisherman, even ship-owner indeed had "one vote". Nobody would have dreamed then that his economic grandchildren would have the power to control the government in Washington and to dictate whether foreign governments would rise or fall.

In any case, property was installed as the central all-powerful force that would ultimately determine all things. But still problems arose. For if it was possible to drive the Indians, under whatever guise, off lands which they did not "own", and turn them into property, which then was owned, and if it was possible not only to kidnap Blacks from their African homes and bring them in irons to work in one's fields in America--and turn them into property, which you owned: you could buy and sell them turning free white native-born farmers into workers, whose labour one bought and then owned, presented quite another problem.

Indians and Blacks--as the Bible taught--were not Christians, and so they possessed no natural rights one had to observe. But white workers were declared "equal" to all others, as "equal" as the owner of the factory that hired them. And yet, it turned out that they were not.

From the very beginning--from the first desperate attempts to find an instrument by which, in fact, they could more or less equalize their relationship to their employer--workers were branded as criminals for organizing unions, as "conspirators" for agreeing among themselves to withhold their labour until the employer granted certain demands.

And from that point on--from the American early 1960's until present day--the struggle of workers to find some mode of "equality" relationship between themselves and their bosses has continued in bloody battles.

Let this one portrait of that struggle down the bloody years claim thousands of martyrs, and tens of thousands, even millions of victims, suffice. This "incident" took place on August 26, 1919 the famous Steel Strike. Fanny Sellins, one of those remarkable produced by the American labour movement, had made the cause of the workers the cause of her heart and soul. She had been highly successful in getting the coalminers organized.

A dozen drunken deputy sheriffs, led by the mine official Allegheny Coal and Coke Company, tried to break through the picket that day. They came, not with petitions or arguments, but with blazing. Joseph Strzlecik, one of the pickets, fell mortally wounded. Fanny Sellins nearby, rushed to save him, to get the children out of the way of the Company savages. They were still clubbing Strzlecik bleeding on the ground, and when she pleaded with them not to kill they turned on her.

It hardly needs adding that nobody was ever arrested for this nor were the "human rights" of either the victims or the "throng of women and children" ever considered for a moment, not then nor even at the brutal massacre of women and children at Ludlow, Colorado where they were burned to death by the Rockefellers, nor later at Baby Face Nelson in Detroit when they were shot to death by Henry Ford. For union organizers was routine, subjecting members of unions to every variety of harassment was simple policy, slandering and lying about motives for organizing workers into unions was the dominant content of the "free press". Finally it amounts to a monstrous denial of the elementary rights of human beings to use the methods they choose to prove most beneficial to them, to better their lives.

But the Constitution has never accepted the "right" of workers to form unions and to withhold their labour in a strike as a basic right. Those laws passed by an employer-dominated Congress that granted certain rights to the workers (the passage of the Wagner Act) were wrenching out of their reluctant hands during the Depression years (1929-40) only when refusing to grant them would have led to worker revolts.

Even so, they were almost immediately diluted, compromised, mined, twisted, even turned into their opposite by the passage of labour laws like the Taft-Hartley law and the Landrum-Griffin law in effect, placed trade-unionism in the USA at the mercy of a boss-dominated Congress.

Today, over 100 years after the first American strikers were indicted for conspiracy, one can still read in a magazine which is the leading ideologist for American business: "Advising companies how to ward off labor organizers, or how to get rid of unions already on the scene, is fast becoming a growth industry of its own" (US News and World Report, Jan. 30, 1978).

Despite decades of struggle, oceans of blood being shed, personal tragedies suffered through, the American working class has remained as hopelessly outside the gates of acceptability as it ever was.

All this may be true--and much, much more--the line adopted by Arthur Goldberg (who was once an attorney for the Steel Workers before he turned around and became one for the monopolists) runs that it is all irrelevant and immaterial. For one can charge a violation of "human rights" on the United States only when the means for preventing injustice are proscribed by government action, and nothing else.

Crimes against workers by employers are not crimes by the state. In fact, workers have the means to seek justice for injury in the courts. Indians have the right to protest, organize, petition Congress for redress of grievances. It is not forbidden by the government.

Blacks, too, enjoy all such rights. They may own newspapers to sound their case, elect officials through the political process, petition Congress to alleviate their suffering, if they can prove they truly are suffering, and so work their will equally with all others.

Workers, too, have the right to petition, protest, organize, beg and bluster in an attempt to persuade Congress to grant their wishes, but that's all. They may petition and beg for the right to a job. But that right is not theirs. It is not granted to them as a birthright in the Constitution. It is not the law of the land that every man or woman who wants a job is thereby guaranteed one, as an employer is guaranteed protection of his private property.

If there is no right to begin with, one cannot therefore say that there is a denial of that right. On such sophistries does the whole case for "human rights" stand.

When the great French satirist Anatole France noted dryly that both the rich and the poor alike are free to sleep under bridges and beg, he was anticipating the words of the present occupant of the White House, when he said: "Well, as you know, there are many things in life that are not fair, that wealthy people can afford and poor can't. But I don't believe that the Federal Government should take action to try to make these opportunities exactly equal, particularly when there is moral factor involved."

It could hardly be stated any more plainly. If you are rich, you have rights, human or super-human. If you are poor, you do not, "particularly when there is a moral factor involved". Capitalist relations are sacred. Q E.D.

It all boils down, therefore, to a very simple position, after all. In bourgeois countries, one has the right to petition for his human rights and this right to beg and plead is in essence his human right. In the socialist countries, the people already possess these human rights, and the need to be free to petition for them is therefore not only superfluous but ludicrous.

But even the assertion by bourgeois apologists that the individual in bourgeois countries has free access to the means of petitioning, begging, pleading with, presenting his case to do not hold up even under the most cursory examination.

The pillars upon which the freedom, the "human rights" of the individual were based, according to the American Bill of Rights, are the right to a free press, the right peacefully to assemble and petition Congress for a redress of grievances, the right to the security of person and property from unlawful search and seizure, the right to a free election etc.

Even more typically, state legislature, where anti-labour laws are readily passed--for instance, the so-called "right to work" law which makes union shops illegal--are no more than legislative extensions of business board rooms. For instance, a survey of the professions of legislators of the nation's 50 state governments, made by the Insurance Information Institute (published in the US News & World Report, Jan. 9, 1978) reveals that most of the state legislators are either lawyers or businessmen--over 70 percent--and those who are not (government employees, educators etc.) share their ideology. Of those listed as "labour, non-profit organization officials" there is a representative of only 1 percent.

All these "rights" by the way, are defined as existing in relationship to the "government". That is, any violation occurs only when the "government" moves against the press, not when the press is suppressed by other (i.e. economic) means, when the government forbids free assembly and petition, not when a local authority does, or a gang, or personal privacy and security are violated only when the government tries to do so not when private individuals (i.e. business, corporations) do so.

But even this myth has been lately shattered. Revelations that have come pouring out of Washington have destroyed forever the fairy tale that the press existed "independently" of government. The whole world now knows that most of the press cooperate willingly (which, some might find, saves "government's" honor after all: they were not pressured to do so) with the CIA in its crimes, the FBI in its.

But even before these revelations came out, nobody had any idea about how "independent" a monopoly press which was part and parcel of the monopoly itself could be. "Independence" toward government was actually defined as the "independence" of a Republican-owned newspaper to a Democratic administration and the independence of a Democratic press determined by how "independent" it shows itself toward a Republican administration.

But real independence was, in the past, and is today, just as ruthlessly eliminated, by fair means or foul, as in any autocratic

Recent revelations that, to all intents and purposes, the entire press worked hand-in-glove with the CIA (as it for years had worked with the FBI) in order to suppress news, distort and falsify it, and not just trivial or marginal issues but on life-and-death issues, has vindicated what the Left has known all the time but now it was known to the millions of Americans who all down the years had been the victims of "managed" news.

But if the "free press" is a myth, how much more a myth is the notion that every American is free to petition his government for redress of grievances without punishment?

It is now again publicly admitted--and it all poured out during Water-gate--that, on the contrary, government, federal, state and local, keep a close watch on dissidents, enter their names into police files and then, by various means, extending from the vicious to the violent, punish them for their opinions.

Now, everybody knows in America what once only the Left knew: that is that the government, acting through the FBI and CIA, as well as the military, infiltrated peace organizations, women's organizations, in fact, all protest organizations, and through their agent-provocateurs provoked crimes and violence that was contrary to the policy and interests of those organizations.

We know that telephones were systematically tapped, letters were lost on FBI insistence and new ones refused, that homes were ransacked secretly, and reputations destroyed by blackmail and seduction. We know, too, that drugs were secretly used by government agents to control dissidents, and that, as in the case of the Black Panthers, open warfare was instigated inside the movement resulting in several cases of death. We know, too, that the chief FBI agent, J. Edgar Hoover, climaxed his lifetime career of framing labour and left personalities by attempting to frame the Rev. Martin Luther King, Jr., the famous Black civil rights militant, and the possibility that he and his FBI might have been involved in his eventual assassination still remains an open question.

But it is also known today that the government, acting as a lawless regime, assassinated foreign leaders for political reasons, "destabilized" Chile as it had earlier "de-stabilized" Guatemala and other countries.

with bribes, secret money deals, blackmail, had massively intervened in a whole series of other countries with bribes, secret money deals, blackmail, etc., climaxing this list of horrors by the Bay of Pigs leading directly into the monumental crime of Vietnam.

But all this is shrugged off as the waywardness of overtly zealous administrators, and in any case, the blame, if blame there was, of "the previous administration".

Still, in America, the crowning glory of the democratic system is its right to vote freely for whatever party one chooses. But even this myth has been exploded recently. Not only has it come to grief on the question express their positions on a par with the "major" parties--(they do not)-- and on the question of whether or not the FBI and CIA interfere with their operations (they do), but also the myth has been destroyed at its very centre. It is now also clear to millions where it was not as clear before (Watergate and Vietnam) that the two major parties are single monopoly-controlled parties and shuttle power between them without changing its essence.

And money is the name of the game. If in the "bad old days" political parties bought a citizen's vote for a silver dollar and mug of beer, today the "change" is not so much in bribing the individual voter, though it still happens, as it is in being able to buy enough TV, newspaper and other "time" and "space" to inundate him with your version of things and events, to present your candidate as a personality (loving father, dutiful husband, devoted church-goer, etc.: such a man in a good man, he will be good for the country, etc.: vote for him).

With TV time priced, in 1976 at \$90,000 a minute, and with everyone acknowledging that the man who gets the most TV exposure is the man most likely to win, obviously then those parties that cannot afford \$90,000 a minute for TV time cannot hope to make a showing at all.

And this is exactly how it works out. The man manufactured for TV exposure is an acknowledged myth, a fiction--a character on film. That myth is voted for. The real man comes out from beneath the false-face only when he's safe in office and then there's nothing you can do about it.

But even though voting is touted in America as the essence of democratic freedom, the truth is that in federal elections hardly more than half of those eligible to vote actually do so, and in state and local elections, often the figure falls far below 50 per cent. The simple fact is that most elected officials in America are elected by a minority of the citizens, not a majority.

In November 1977 a poll was taken by the New York Times and CBS News in an attempt to find out why so many people eligible to vote nevertheless did not. The poll found that 55 percent of the voters they interviewed and the same percentage of the non-voters believe that "public officials don't care much about what people like me think". And 58 percent of the voters and 59 percent of the non-voters believe that "government is pretty much run for a few bit interests...". And, though 54 percent of the voters felt that "you can trust the government to do what's right" some of the time, only 51 percent of the non-voters thought so.

This skepticism about the two-party system, which has always been touted as guaranteeing political choice in America, further reflects itself in the steep drop of members in the Republican Party (only 20 percent of the voters in 1977 admit to being Republicans) and almost as serious a drop for the Democrats who get somewhere from 40 to 48 percent. At those voters who classify themselves as "independents" now stand at between 31-33 percent of the voters and signify a tremendous loss of confidence in the two-party system which has been traditional in the USA.

One of the most fundamental rights of the people--a human right which leads to all other rights--is the right to know the truth. When a highly-controlled press poses as a "free press", this is a cruel deception: are endlessly sacrificed in meaningless wars, why they live in an atmosphere of intense anxiety, of unrelenting fear that war will break out at any moment.

Here, then, is the central myth in whose name the American people are deprived of the most fundamental information about their own lives and the world they live in: that the threat of war comes from the Soviet Union and other socialist countries where "human rights" are consistently violated.

And this myth is used to cover up the truth which has been concealed from the American people in a conspiracy of the press and government, of the leaders of the intellectual world, church and schools, that is, to convince people that the struggle of the people for their liberation is tyranny and that the rule of a minority against the majority is freedom.

Monopoly-capital is a monster whose appetite is so gargantuan that it devours governments and peoples, destroys the land, pollutes the air, corrupts the youth, all in the name of "profit". Millions of human beings have been--and still are being placed on a never-ending conveyor belt of death that threatens to deliver humanity itself to its extinction.

And chief among the suppliers of death weapons to the nations of the world where "human rights" have never existed, or if they did for a moment, were almost immediately obliterated, is the United States.

"Between 1973 and 1977" writes Michael T. Klare, Fellow of the Institute for Policy Studies, (New York Times, Aug. 10, 1977), "these 10 worst offenders (of human rights: Chile, South Korea, Thailand and Uruguay among others--P. B.) received \$1.1 billion in United States military grants--43 percent of all such funds disseminated during this period... And despite President Carter's pledge to cut back on arms deliveries to repressive regimes, these 10 countries are scheduled to receive \$500 million more in United States military aid during the fiscal year 1977...."

"Government records show United States agencies and corporations providing arms, equipment, training and technical support to the police and paramilitary forces most directly involved in torture, assassination and incarceration of civilian dissidents..."

So much for supporting "dissidents"! So much for "human rights"! evils today pessimism about curing even the mildest of social evils reigns everywhere.

Violent crime soars. It becomes routine, Guns proliferate, the use of them to settle problems, ranging from family quarrels to getting money, is almost as automatic as, for a good Catholic, going to church.

For crime and criminals, the New York Times (Sept. 16, 1977) writes "Most prisons need to longer aspire to schools or counseling centers or anything but places with bars and locks."

Education? Popular education in America has suffered body blows in the last 20 years. This is signified not only by the deterioration in standards but also in the fact that a pronounced division between rich and poor, white and Black, has appeared in the American school system, which is being institutionalized in the enormous growth of private schools and in the flight of white middle class to the suburbs.

On drugs, not only has the fight to stop the drug traffic ended in defeat, the spread of them to higher levels of society has increased. At the same time the traffic is more and more firmly in the grip of the

for world which costs billions from it annually. It is a force which is not only children but local and state governments.

Pornography has broken out of its past confines and has become a national plague. It, too, is a billion-dollar industry in the hands of rogues who corrupt everyone they touch--from those who buy their products to those who manufacture them and those who defend the spread of them in the name of "freedom".

The influence of new cults, religious and otherwise, waxes. According to a Gallup poll (1975) 32 million Americans believe in astrology. Some 36 percent of the American people believe that "people are sometimes possessed--taken over in mind and body by a demon or evil" (1974). About five percent of these say they actually saw the evil with their own eyes or knew someone who did.

Sociologists from the Universities of Delaware, New Hampshire, and Rhode Island reported (March 20, 1977) that their study of middle-class married couples revealed that "parents kick, punch, or bite as many as 7 million children a year, 'beat up' 460,000 to 770,000 more and smack 46,000 with knives or guns... that 2.5 million children wield a knife or gun against brother and sister."

In September 1977, The President's Commission on Mental Health included in a report that psychiatric and psychological disorder among Americans were more than previously believed and that one-quarter of the population suffered severe emotional stress. The report estimated that "between 20 and 32 million Americans need some kind of mental health care at any time"... and that even those numbers were "conservative" and that it was probable that about 40 million Americans had diagnosable mental disturbances and were in need of professional care.

Noted the New York Times (Feb. 12, 1977): The number of suicides in the US "is probably 35,000" annually ("probably" because many actual suicides are reported as "accidental" deaths). Of these, 5,000 are under 15 and 2 1/2 years of age. Probably to be added to that number are some of the 5,000 who die from "accidental" overdoses of sleeping pills.

The fact that millions of the American people are not enjoying their human rights is denied by those who insist that the only definition of "human rights" consists essentially in whether or not the action of government alone is denying its citizens the right to a free press, free speech, free assembly, or suppresses a system of free elections.

It does not matter if a man is jobless, for providing every man a guaranteed job is not included by bourgeois standards as a "right".

It does not matter if a man or men, millions of them--cannot in fact exercise their "freedom" of speech because they are unable to buy a newspaper, radio station or TV, publishing house, etc, as long as government does not specifically enjoin him from doing so. It does not matter if "freedom of speech" actually in practice is "freedom" to be subjected to the "freedom of speech" of those who own the media, as long as someone has the theoretical freedom to buy and own these media.

It does not matter that the two-party system is controlled by the same class forces, as long as theoretically one is not prevented from forming a party of one's own, no matter whether additionally in fact it is practically impossible to do so because of financial problems and other limitations placed on third parties.

It does not matter that the right to strike, to join a union is not a basic, Constitutional right of workers, and is constrained by forces aiming to eliminate those tentative "rights".

And so, on. "It doesn't matter," seen from the point of view of formal democracy. But obviously it does matter to millions who feel less than human in a society in which their dignity affronted by the debased culture they are subjected to and where uncertainty of existence increases day by day.

The Helsinki Final Act (of which only the "Human Rights" exists for some) did not envisage unleashing a propaganda war. The object was for one side to annihilate the other. The object of the Act was to find common ground which transcended all other differences no matter how serious, on which both--or all sides could stand. Common ground is peace--is the acceptance of detente--whose purpose is not that one system is morally superior to the other but that the balance of forces historically arrived at in the world preclude the outbreak of outstanding issues by war.

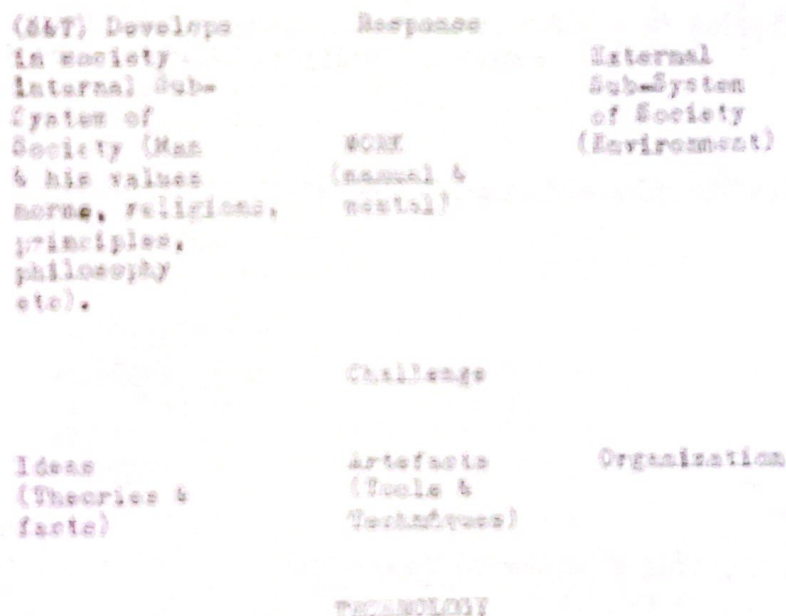
TECHNOLOGICAL CHANGE AND RURAL DEVELOPMENT IN TANZANIA

By

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1.1 THEORETICAL EXPOSE:Interrelation Between Technological Change and Social Transformation

Science and Technology means different things to different people. Some people consider science and technology as an activity involving basic scientific curiosity, while others associate science and technology mainly with the engineering aspects of science and technology. Yet there are those who consider the political consequences of applying science and technology in society. There are other people whose prime concern is to consider the revenues and costs associated with science and technology especially in research and/ or in importing machinery, technical personnel, and information systems. In the third world, perhaps the only unifying factor with regard to science and technology are the suppliers of solutions, though only partial solutions, to national developmental problems and as such, science and technology are seen as the foundation for socio-economic development.<sup>1</sup> Such problem as maladministration, corruption, and injustice have no technological solution<sup>2</sup>. The interrelation between science and technology on one hand and culture and the environment of society on the other hand is complex as illustrated in the following model:



<sup>1</sup> See Lay R., & Strasser, G., "Science and the Needs of Society" - in Science and Technology and the Future, K.G. Saur Verlag K.G. Munster, New York Paris, 1979, pp. 870-877.

<sup>2</sup> Murthy, K.K., "Science, Technology and Society" in Science and Technology and the Future, K.G. Saur, Munster, New York London, 1979, p. 1072.

\* This paper is a revised version of a paper which the author presented to a Staff-Students Seminar in the Institute of Development Studies of the University of Dar es Salaam in March 1980.

\* The author is a Senior Lecturer in Development Studies specializing in Science and Technology.

We are in full agreement with the Lidquists who have asserted that Widespread technological and social change interact so intimately that one kind of transformation is not possible without the other... Developing countries cannot experience the technological transformation necessary to achieve self-reliant development and meet minimum needs of their people without also experiencing a social transformation."<sup>3</sup>

Science identifies the need and provides the basis for technological solutions to social needs especially basic needs such as food, water, shelter, clothing, health care and education.

To discuss technology and rural development in isolation of each other is a gross error because technology cannot be alienated from society or any development process be it urban or rural development. Technology is an ingredient or integral part of any socio-economic development process irrespective of reference to any pre-colonial, colonial or post-colonial societies. Early civilizations developed following the discovery of fire, metals, and subsequently the transformation of tools, beginnings of agriculture and accumulation of technical skills as well as organisational methods arising from specialization.

6 The story of man's development can in some respects be traced from man's struggle and responses to varying environmental challenges. The role of science and Technology in development is to increase agricultural and industrial efficiency in production apart from promoting social welfare services.

## 1.2 Philosophical Reconstruction of Linear Flow: Concepts/Resources to Solutions.

The following is a schematic representation of the flow or stages in searching for solutions to social needs by utilizing science and technology:

### Social Needs

Concept Rationalization Acceptance Involvement Satisfaction

### Ideals & Principles

Policy

Goal

### Skill Resources

Concept Basic Applied Engineering Technology  
Research R&D R&D R&D

### Technical Development

Figure: Technical Development in Solving Social Problems:

Source:

<sup>3</sup>Lidquist, C., & Lidquist, O., Social Carriers of Techniques for Development SAREC Report: R3: 1979, Swedish Agency for Research Cooperation with Development Countries, Stockholm 197, pp. 42-43

Source: Lay, R., & Strasser, G., op. cit; p. 872.

Technology is in fact both technical and social practice.

[illegible]

### Definition

The rural people in the United States live in poverty and their production forces are very inefficient. In this paper, rural development means all concerted efforts at raising the standard of living of the rural people through the provision of basic needs and a guarantee of human dignity or the elimination of man from barbarism and exploitation.

In this paper, the author uses the term technology to mean a set of related characteristics, disciplines, and concepts which are used to design and construct the system of human-machine control in such a way as to be able to use technology to mean some adaptation to this complex. Our concern (in this paper) is not with the history or generation of new knowledge or such, but rather with the adoption and application of technology to the implementation of something new relative to current practice.<sup>12</sup>

De la Compañía de Santa Fe

Recent trends in academic studies and discussions on rural development indicate a clear awareness of sociology and to some extent economic history in some attempts to examine the rural question in the third world with an almost total neglect of the role of science and technology in rural development. Yet this is the proper application of science and technology, not rhetoric, shall still remain as one of the major features to succeed or failure in transforming the rural economies of the third world countries. "Increasing technological competence may be viewed as a prime force in the development and modernization of human societies."<sup>6</sup>

This paper is not just an academic paper that dwells on conceptual and methodological issues of rural development. The primary objective of this paper is to explore the application of science and technology in the empirical context of rural development. As such, the author examines some prospects and challenges in the application of science and technology in rural domains as illustrated by special reference to special the rural water supply and rural energy systems.

Tanzania is involved in a world based on technology, and we shall remain backward and dependent upon others until we are able to produce our own people with scientific skills.<sup>10</sup>

In 1971, the TANU Biennial Conference meeting in Dar es Salaam resolved that Development Plans should put priority on the provision of water, education and health.

The Party document, *Siasa ni Kilimo*<sup>11</sup> that is Politics is Agriculture which is otherwise known as the Iringa Declaration of May, 1972 is another testimony of Tanzania's recognition of the central role of scientific knowledge and technology in development. *Siasa ni Kilimo* calls for the adoption of modern crop husbandry in order to attain national self-sufficiency in food and cash crops.

In 1973, the National Executive Committee of TANU passed and issued guidelines for the establishment and advancement of small scale industries in order to enable Tanzania exploit and utilize fully her natural resources such as minerals, water, fisheries, forests and so on.<sup>12</sup> Low technical capability in industry, including small scale industries, can be explained mainly by Tanzania's history of colonial domination and exploitation which left Tanzania (Zanzibar and Tanganyika), at independence without much expertise in engineering and technology, and without a strong economic base to use her natural resources. At present, it is only the small scale industries which Tanzanians can establish and manage without having to rely heavily on foreign assistance, especially if Tanzanians form Co-operative Societies on an Ujamaa (socialist) basis. Such is the case because small scale industries do not require very heavy investment, and often sophisticated large machinery or highly specialized expertise are not needed. One objective of Ujamaa policy is bring about transformation and revolution in the rural areas in technology and knowledge in general.<sup>13</sup>

## II MODERNIZATION OF AGRICULTURE:

### 2.1 Factors in Modernization of Agriculture:

"Technology is but one of the many factors which limit agricultural improvement...In general, agricultural development may be limited by many factors and a systems approach is necessary."<sup>14</sup> Mosher, for example has identified ten factors as being universal for agricultural development, of which five are 'essentials' including markets, technology, local availability of input supplies, production incentives, and transportation. Without any of these, there can be no agricultural development. In addition, there are 'accelerators' including markets, technology, local availability of input supplies, production incentives, and transportation. Without any of these, there can be no agricultural development. In addition, there are 'accelerators' to development, which are important but not indispensable, including education, production credit, group action by farmers, land improvement and development, and national planning.

### 2.2 Low Agricultural Productivity:

Tanzania's economy is dominated by the agricultural sector. Thus, the modernization of the agricultural sector is very crucial not only to the economy as a whole but also for the socialist transformation of the rural economy which involves nearly 92% of the people of Tanzania.

10 - See TANU, *Mazimio ya Mkutano Mkuu wa 15 na 16*, TANU, Dar es Salaam, 1971, (Resolution No. 18, 15th TANU Biennial TANU Conference).

11 See TANU, *Agizo la Halmashauri Kuu ya Taifa Juu ya Kuanzisha na Kuendeleza Viwanda Vidogo Vidogo Nchini*, TANU, Dar es Salaam, 1973 paragraphs 3 and 6.

We must, in other words, aim at creating a nation in which Ujamaa farms and communities dominate the rural economy and set the social pattern for the country as a whole.<sup>15</sup>

Nyerere's observation was made at the time of the Arusha Declaration in 1967. While it is true that agriculture dominates the national economy, the place at which the agriculture has been modernized in most parts of Tanzania warrants serious concern. Five years later, (1972) the then ruling party, Tanganyika African National Union (TANU) had to issue guidelines on possible steps to take in order to modernized agriculture

"Our agricultural efficiency has gone down since independence... our methods of (crop and animal) husbandry have not improved, that the increases in output are in output are much less than they should given the labour effort expended."<sup>16</sup>

Yet by October 1979, agricultural efficiency had worsened in Tanzania. According to a Chama cha Mapinduzi Report, cotton production dropped from 418,845 bales in 1976/77 to an expected 285,706 bales in 1979/80 while sisal production dropped from 209,303 tonnes in 1968/69 to 89,900 tonnes in 1977/78.<sup>17</sup>

The large estate farms and estates which use only about 10% of cultivated land, employing less than 5% of agricultural labour, produce nearly 50% of the export crops. The following table gives average crop yields by Tanzanian peasants, who most of whom don't use fertilizers and do not follow other modern crop husbandry practices, and possible crop yields which could be obtained under Tanzanian conditions if modern crop husbandry practices, and possible crop yields which could be obtained under Tanzanian conditions if modern crop husbandry practices were followed.

Table 1: Average Crop Yields by Tanzanian Peasants for 1978: and Possible Yields for Modern Crop Husbandry (Tonnes/ha)

<u>Crop</u>	<u>Average Yield/ha</u> (without manure, insecticides)	<u>Possible Yield/ha</u> (for modern crop husbandry)
Maize	0.2 - 2.6	2.0 - 5.0
Cassava	3.0 - 11.0	15.0 - 20.0
Sorghum	0.4 - 1.0	3.0 - 5.0
Groundnuts	0.3 - 0.7	1.0 - 1.8
Rice (Paddy)	0.4 - 3.4	2.5 - 6.0
Mixed Beans	0.3 - 0.7	1.0 - 1.5
Cotton	0.3 - 0.8	0.8 - 1.5
Round Potatoes	6.0 - 10.0	25.0 - 30.0
Sweet Potatoes	7.0 - 10.0	15.0 - 30.0
Bananas	5.0 - 10.0	25.0 - 30.0

Source: Ministry of Agriculture, Dar es Salaam, 1978.

12 See TANU, Maazimio ya Mkutano Mkuu wa 15 na 16, TANU, Dar es Salaam, 1971, (Resolution No. 18, 15th TANU Biennial TANU Conference).

13. SEE TANU, Agizo la Halmashauri Kuu ya Taifa Juu ya Kuanzisha na kuendeleza Viwanda Vidogo Vidogo Nchini, TANU Dar es Salaam, 1973 paragraphs 3 and 6.

14 Jones, G., The Role of Science and Technology in Developing Countries, Oxford University Press, London, 1971, pp. 53-59.

15 Nyerere, J.K., Socialism and Rural Development, Government Printer Dar es Salaam, 1967, p. 15.

16. TANU, Siasa ni Kilimo, TANU, Dar es Salaam, 1972, p. 6 (TANU, Politics is Agriculture, TANU, Dar es Salaam, 1972, p. 6).

17 See Tanganyika Standard (Newspapers) Ltd, Sunday News, No. 1396, October 28th 1979, Dar es Salaam, p. 1.

The average crop yields for most crops are just about 30% of attainable yields, as has been demonstrated by research institutions, if modern crop husbandry practices are used.

One of the reasons for poor agricultural performance in rural areas is poor extension services. It is estimated that the agricultural technician caters for nearly 5,000 peasants. Some of the reasons for the low productivity of the small farmers are inadequate technical know-how; poor agricultural credit-worthiness; inadequate organization for effective production programmes; inadequate dissemination of agricultural research findings to farmers, and inadequate professional advice. The agricultural extension is inefficient. In 1978 there was one agricultural field technician to every 1500 farmers which means that on the average, one farmer could have the service and attention of such a technician on the farm for a maximum of only one full day's consultation and demonstration in four to five years! Besides that, the extension staff are ill equipped and have in most cases to serve on many other district projects, for a variety of crops, amidst poor means of transport in the rural areas.

### 2.3 Utilization of Agricultural Inputs:

The application of manure and artificial fertilizers in any country is an intricate activity which needs careful attention because blanket prescription of certain doses of fertilizer to large agricultural zones of different soils could in fact lead to soil deterioration and in some cases less crop yields per unit area. In volcanic red soil (fikurusi), also known as laterite soils, as is the case in large areas of Shinyanga Mwanza and parts of Mara region, guess-work methodology in the application of Sulphate of Ammonia intensifies acidity of soil. This can lead to low crop productivity. Villagers of Ihayabuyaga Village in Geita district, for example, have established that when they use artificial fertilizers, such as Triple Super Phosphate and Sulphate of Ammonia, their average yield per acre is not as high as when they use cow-dung manure according to recommended dosage. In 1976/77, Ihayabuyaga villagers had a 74 acre communal maize farm. They used artificial fertilizers, we hope correctly! and they got 164 bags of maize which is an average of 2.2 bags of maize per acre. In the following year, 1977/78, the same villagers, on the same piece of land, under very similar climatic conditions realized an average of 3.5 bags of maize per acre after using cow-dung manure.

Recent studies by the Institute of Development Studies at the University of Dar es Salaam indicate that a substantial percentage of the required agricultural inputs which is delivered to villages is left to rot in village stores or in homesteads as is illustrated in the following table:

Table 2: Utilization of Agricultural Inputs in Kigogo Village/Kibondo District - 1978.

<u>Fertilizer/ Insecticide</u>	<u>Amount Delivered</u>	<u>Amount used</u>	<u>Percentage Utilized</u>
T.S.P.	125 bags	62 bags	50%
C.A.N.	312 bags	226 bags	77%
S.A.	200 bags	200 bags	48%
H 632	3600 kg	1476 kg	41%
DDT	2496 kg	1467 kg	60%

The following table concerning the utilization of fertilizers and insecticides also strengthens the assertion that a substantial amount of agricultural inputs are not used.

Table 3: Use of Fertilizers in Geita Cotton Project Villages - 1975/76 Growing Season.

<u>Input</u>	<u>Total Input Delivered</u>	<u>Total Input distributed</u>	<u>Balances stored in ho- mesteads</u>	<u>Percentage distributed but not used</u>	<u>Balances stored in Village Stores</u>
-TSP (50kg bags)	28,034	21,429	5,655	26%	6,605
-SA (50Kg bags)	57,930	40,455	12,455	30%	17,475
-Thiodap (litres)	152,787	56,353	-	-	96,434

Source: Tanzania Cotton Authority,

Geita Cotton Project Quarterly Report, January-March 1976,  
Annex 6 (a) and 6 (b) See also, Quarterly Report of same project  
for April to June, 1976.

Among reasons cited for the apathy with regard to the use of fertilizers and insecticides is general ignorance and general fear of peasants concerning credit terms for agricultural inputs given to them by the Tanzania Rural Development Bank. This observation is quite pronounced in the World Bank financed Project and also in the Geita Cotton Project, also financed by the World Bank.

The other aspect concerning the use of agricultural inputs is the problem of late delivery and distribution of agricultural inputs to peasants in good time for the planting season. In a typical village, Ikulu, Geita District, out of a total of 1200 bags of Triple super Sulphate delivered to the village by September 1975, only 170 bags (that is 14%) were distributed to peasants by December 31st 1976. The optimum recommended planting dates for cotton in that zone are from 15th November to January 15th. This means that there were only two weeks left for the planting/sowing season and yet the fertilizer, TSP, which is used for dressing fields before sowing was still not distributed. There are plenty of cases of this type of delayed delivery and/or delayed distribution of fertilizers, insecticides and pesticides.

#### 2.4 Agricultural Mechanization of Tractormania?

Agricultural Mechanization is the replacement of human labour in agricultural production and processing activities by machines including the performance of activities such as ploughing, harrowing, sowing, weeding, milking and milk-processing as well as the transportation of agricultural inputs and agricultural products. Agriculture in Tanzania is still largely subsistent and only about 10% of farmers employ farm machinery. Unfortunately, nowadays, there seems to be a growing tendency to identify and single out only tractorization as agricultural mechanization. This tendency is unfortunate because firstly, tractors are very expensive to buy and maintain and most peasants cannot afford them; secondly there are simpler, cheaper and more appropriate technologies as ox-carts and ox-ploughs which could be made/used easily in the rural areas. It would ofcourse be necessary to establish rural workshops with adequate facilities and staff for maintenance and repairs.

Very little systematic research and development has been done regarding agricultural mechanization in the third world, Tanzania included, especially so concerning research on the utilization and problems of tractorization. Objectives of research and development activities in agriculture should be to increase labour productivity, to increase land productivity, to reduce drudgery, to increase employment, and to increase real income.

The following is a summary of the main findings of the study and the implications for the development of the national system of higher education. The study has shown that the national system of higher education is in a state of transition and that the main challenge is to develop a system of higher education that is responsive to the needs of the country and the region. The study has also shown that the national system of higher education is in a state of transition and that the main challenge is to develop a system of higher education that is responsive to the needs of the country and the region.

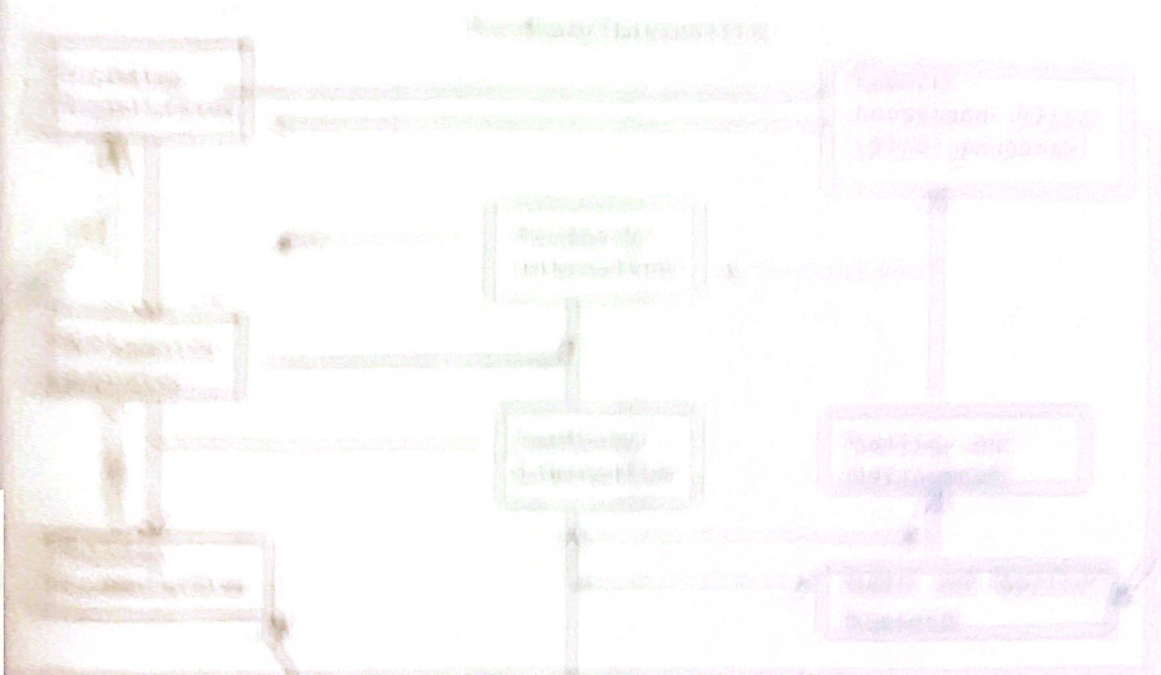


Figure 1: National and Regional System of Higher Education

The study found that the national system of higher education is in a state of transition and that the main challenge is to develop a system of higher education that is responsive to the needs of the country and the region. The study has also shown that the national system of higher education is in a state of transition and that the main challenge is to develop a system of higher education that is responsive to the needs of the country and the region. The study has also shown that the national system of higher education is in a state of transition and that the main challenge is to develop a system of higher education that is responsive to the needs of the country and the region.

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Table 4

Tractor Performance Data:

<u>Tractor No.</u>	<u>Village</u>	<u>Approx.</u> <u>Km from</u> <u>G.C.P.*</u> <u>Head</u> <u>Office</u>	<u>Tractor hours</u> <u>done</u>	<u>Tractor</u> <u>Days</u> <u>done</u>	<u>Acreage</u> <u>done</u>	<u>Acreage</u> <u>per day</u>	<u>Fuel</u> <u>used</u>	<u>Fuel</u> <u>litres/</u> <u>acre</u>
TZ 26923	Kasamwa	20	63.9	8	68.0	8.5	917.0	13.5
TB 26929	Lubanga	25	15.9	2	11.0	5.5	450.0	40.9
TZ 26926	Busolwa	50	43.7	7	45.0	6.4	860.0	19.1
MZH 547	Kamhanga	15	38.3	5	49.5	9.9	650.0	13.2
MZH 546	Kamhanga	15	22.1	2	18.0	9.0	260.0	14.4
MZH 543	Project Farm	2	41.9	2	22.0	11.0	245.4	11.2
MZH 542	Project Farm	2	76.2	7	62.0	8.9	506.0	8.1

Source:

Tanzania Cotton Authority, Geita Cotton Project Quarterly Report,  
Jan - March 1976, Dar es Salaam, 1976.

This data does clearly indicate that not all the tractors were being used efficiently taking into account the low level of acreages ploughed and the oil consumed. For example, tractor TZ 26929 did only 11 acres in 2 days where this could be trebled and yet 40.9 litres of diesel were consumed per acre as against an average of 10 to 11 litres per acre for tractors which operated on the Project Farm; very close to the Project Head Office.

\* G.C.P. Means Geita Cotton Project.

The tractor brought a lot of people's imagination to the extent that it is now a fashion to plough one's shamba (farm) by tractor just as it is now a fashion to build one's house using cement bricks. It is therefore not surprising to note that the tractor-hire-now-and-pay-later-scheme of the Geita Cotton Project was perhaps the most popular feature of the services offered by the project.

...after Siasa ni Kilimo was launched, our main problem has been our belief that increasing agricultural production is tantamount to mechanization-the tractor, bulldozer and caterpillar will salvage our agriculture. The oxenization programmes started in 1969/70 have made no or little progress in spite of the fact that this matter was given new impetus in 1974 by a directive from the Prime Minister...to the effect that the ox-plough should be given due attention in the village development programme.<sup>19</sup>

## 2.5 Food Storage Systems:

To exhort peasants to produce more food is one thing but to ensure that the food produced is used properly is another thing. Between 30% to 50% of the food produced in the third world, mostly in the tropics is destroyed every year through improper harvesting, or storage or lack of means of transportation to ferry food crops from farms to homesteads or from homesteads to marketing stations and industrial processing centres. For Tanzania, this percentage of food wastage is estimated to be between 35% to 40%. It is therefore very important that our science and technology system should face this challenge in order to prevent these excessive losses of food. The most common method of crop storage in rural Tanzania are huts made of poles and plastered with mud or wet dung (makologoto). Over the past five years, the National Milling Corporation has launched a programme of building silos but such storage technology has already proved to be too complex and sophisticated to be of immediate use in rural Tanzania. There is need to put more emphasis on improving traditional crop and food preservation techniques. In this regard the Tanzania Food and Nutrition Centre has a crucial role to lead other research institutions.

Regarding the use of chemicals for crop/food preservation, apart from developing simple but effective food storage systems, peasants should be educated on the importance of utilizing such facilities and also the dangers of chemicals used in preserving some food crops and seeds. For example, it is not uncommon to find that some ignorant peasants wash maize seeds which had been treated with KYANAKIL (CAN) and then they make flour and prepare a maize meal from such poisonous flour.

## III RURAL WATER SUPPLY SCHEMES:

### 3.1 Provision of Rural-Water Supply in Tanzania:

Water is essential for agricultural, industrial and domestic purposes. According to a Report of the United Nations Water Conference held at Mar del Plata, Argentina in March 1977, the world does not lack fresh water. The total global supply is sufficient to meet needs into the foreseeable future. The problem is availability. The report emphasized that "water tends to be available in the wrong place, at the wrong time, or with the wrong quality."<sup>20</sup>

In Tanzania, the provision of water supply to rural communities is one of the top priorities of the Party's (CCM) and the government's rural development programme. By June 1969 the end of the first Five Year Development Plan, a total of 1,452,000 rural people approximately 10% of the population, had been provided with clean potable water.

<sup>19</sup> Ngassongwa, J.M., Rural Development: An Assessment of Socialist Rural Transformation during the first Decade of the Arusha Declaration, (mimeo), University of Dar es Salaam, 1977.

At the end of the second Five Year Development Plan, an additional 1,754,000 people had been provided with clean water in villages bringing the percentage of the population with clean water to 17%. The plan implementation rate was to provide 1.2 million rural people with water each year. However, between 1975 to the end of 1979, only an average of 300,000 people in the villages have been provided with improved water supply per year. Thus, a total of about 5,000,000 people out of the rural population have improved Water Supply (end of 1979), that is approximately 36% of the rural population.<sup>21</sup> At that phase, it is unlikely that all 8630 recognized villages will have improved water supply by 1981. Infact, it is highly probable that the actual percentage is slightly below 36% because of rising costs of construction materials, rocketing oil prices, and general inflationary trend, all of which must have damped down the pace of implementation.

### 3.2 Self-Help in Rural Water Supply Schemes:

A variety of strategies are used in implementing rural water supply projects with emphasis on simple schemes and mobilizing self-help efforts of the local people. The aim of people's participation is to involve rural people in the development of their own water supplies. If such participation is to be effective, the technology used has to be within the people's general knowledge, economic base, and has to be that which demands abilities and skills which the people possess.

Water supply systems differ in their potential for development on a self-help basis. Favourable technologies for people's participation should therefore possess most of the following qualities:<sup>20</sup>

- (a) They should be low in cost.
- (b) Rural people should, with some kind of training, be able to operate and maintain the water supply system. That is, the technology used in the water supply system should not demand a high level of technical skill.
- (c) The system should make as much use as possible of locally available materials, and should avoid heavy reliance on imported materials, such as energy fuels.
- (d) Local labour should be used whenever possible and capital equipment (heavy machinery) should never be used instead of labour.

In a study on the impact of self-help in rural water supply in Tanzania, Mujwahuzi made a comparative evaluation of four technologies which are the main methods of extracting water from the hydrological cycle. The methods are desalination from oceans condensation from the atmosphere; roof and ground catchment from rainfall; dams, wells and canals from surface water and springs, and wells (and boreholes) from groundwater. The following table gives the various technologies used in water supply systems and their corresponding potential for local people's participation in project implementation and also the potential for utilization of local materials.

20 See Omo - Fadaka, J., "The Misuse of Science and Technology" - In Science and Technology and the Future, op. cit., p. 1152.

21 See Tanzania, Government of, Third Five Year Development Plan for Economic and Social Development, 1976-1981, Part One: General Perspectives, Government Printer, Dar es Salaam, 1978, pp 2, 69-70.

22 See also Tanganyika Standard (Newspapers) Ltd, SUNDAY NEWS, Dar es-Salaam, 4 November 1979, p. 1.

22 Mujwahuzi, M.R., The impact of Self-Help in Rural Water Supply in Tanzania, mimeo, University of Dar es Salaam, 1977, -p. 37.

Table 5: Participation Qualities of Water Supply Systems

Type of Water Supply System	Low in Cost	Simple Technology	Local Materials	Local Labour Used
<u>Oceans and Atmosphere:</u>				
<u>Desalination:</u>				
By mechanical Plants	No	No	No	No
Condensation/Atmosphere Rainfall:	No	No	No	No
Roof catchment	Medium	Yes	Yes	Yes
Ground catchment:				
Improving surface	Yes	Yes	Yes	Yes
Soil treatment	Medium	Yes	No	Yes
Lining catchment	Medium	Yes	No	Yes
<u>Surface Water Sources:</u>				
Ponds and Tanks	Yes	Yes	Yes	Yes
Reservoirs	Yes	Yes	Yes	Yes
<u>Groundwater Sources:</u>				
Hand-dug wells	Yes	Yes	Yes	Yes
<u>Tube wells:</u>				
Bored wells	Medium	Yes	No	Yes
Driven wells	Medium	Yes	No	Yes
Jetted wells	Medium	No	No	No
<u>Boreholes:</u>				
percussion	High	No	No	No
Rotary	High	No	No	No

Source: Mujwahuzi, M.R., op.cit.

Desalination by use of mechanical plants brings improvement both in quantity and quality of water obtained. But as a system which has to be used in rural areas of underdeveloped countries this system has many disadvantages. The major constraints for this technology is that the technical know-how required in building the plants call for special expertise, the costs involved in purchasing the machinery and equipment are high and operating costs are also high. If a desalination plant is to be built in an underdeveloped country, machinery has to be imported. Therefore, construction and running of such plants would depend on foreign experts, and local labour would hardly be used. Due to the nature of the required technology, this system of water supply cannot be easily taught and acquired by the rural populations.

Cloud seeding is known to increase the amount of precipitation but the technology required and the costs involved in inducing rainfall makes this approach to water supply unsuitable for development in rural areas.

Roof catchment system of collecting rainwater seems to be the easiest way of obtaining water for domestic purposes in rural areas. The system brings an improvement in both quantity and quality of water. The system can be built in almost any village materials as well as locally available

labour and skills. The only major expenses involved in the roof catchment system is the cost of the roof and storage. This system is ~~quite~~ especially in areas which experience only adequate seasonal rainfall, but in such cases large storage units would be needed and these are costly to build. Another advantage of using this system is that it is flexible. The system can be made for use by and for one homestead, collecting rainwater from one house roof, or it can be built with a group of households collecting rain water from individual house-roofs and leading it into a central storage unit.<sup>23</sup>

Among the three ground catchment systems, surface improvement alternative seems to have the highest potential for participation since it does not require the use of imported materials, as is the case with the other two alternatives; and it can easily be developed by the local people. The only problem with this system is in the poor quality of the water collected.<sup>24</sup>

### 3.3 Operational Problems of Rural Water Supply

There are a number of problems which have hindered the regular provision of improved water to rural communities in Tanzania. Many rural water supply systems are either in very poor working condition or not operating at all. In a study of rural water supply in Dodoma district, out of thirty one water supply projects in the survey, only nine were in some form of working condition, and the remaining twenty two were out of order were for supply of water to 57,065 people, 80,183 cattle, 28,399 goats and 8820 sheep. Some of the main factors which were identified for this poor state of affair regarding rural water supply, and this is not limited to Dodoma District, are lack of trained personnel for operating, maintaining and repairing water supply systems, lack of maintenance facilities, inappropriate design of projects including poor selection of machines, lack of transportation facilities and general lack of involvement of the village communities in the development, operation and maintenance of rural water supply projects.<sup>25</sup> See Appendix

With the frequent shortage of diesel in rural areas, from time to time, even some of the water supply systems which are in good working order do not serve the people because they do not operate for up to 30% of the time. There is one other problem of rural water supply systems which concerns village planning and engineering design of water projects. A number of rural water supply schemes are now overburdened or over strained in that such systems were originally planned to serve smaller population than they are presently being expected to serve. A good example of this is the Kalemela Igalkilo Water Supply Scheme in Magu District which is now serving slightly over twice the original population and livestock than had been anticipated during the planning and design stage. A similar problem of an overloaded Water System occurred at Lusanga Village in Muheza district where the water supply from an underground source, was also diverted and extended to the nearby Muheza District Headquarters which was not catered for in the original design and choice of machinery or tanks. A new water supply for Muheza has now solved this problem.

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<sup>23</sup> See Mujwahuzi, M., op cit.

<sup>24</sup> Ibid.

<sup>25</sup> For details See Mujwahuzi, M., A Survey of Rural Water supply in Dodoma District, BRALUP Research Paper No. 57, University of Dar es Salaam, 1978, pp. 7-17.

## ENERGY AND RURAL DEVELOPMENT:

### Energy in Socio-Economic Development:

All systems, whether natural or man-made depend on energy. Energy is an essential input in the development of society. The introduction of agriculture and eventually industrialization in human history were paralleled profound energy and social revolutions:

Energy revolutions in the sense that each vastly increased energy availability over the former period; social revolutions in that each increased the scale of society and rearranged the social order around new technologies. As fossil fuels, the energy of industrialization, are depleted, the world enters into the third and most important energy and social revolution in the development of civilization...The evolution of civilization over more than a million years can be seen as a successful quest to control greater amounts of energy through social organization in three different energy and social systems; hunting and gathering, agriculture and fossil fuels.<sup>26</sup>

### 2 Main Features of Energy Consumption in Rural Areas:

Villagers in Tanzania as in other African countries, use very little non-human or dead energy. There are three distinct features of energy consumption in Tanzania's rural sector. First, Tanzanian peasants depend very heavily on muscular energy to perform all basic activities for human survival. The second main feature of the rural population's energy consumption pattern is that most energy is derived from firewood and vegetation based sources. Charcoal is also widely used for cooking but this is more so in the urban centres than in the rural areas. It has been estimated that more than 95 per cent of Tanzanian wood volume consumption in the form of fuelwood and poles is consumed in the rural areas.<sup>27</sup> It has also been estimated that a minimum consolidated forest reserve of 75 hectares per village is required if villages are to replenish at par the wood that is used annually and simultaneously reserve habitat from degradation. Most villages in Tanzania do not have even a third of that much area of forest reserve to keep the balance between supply and demand. There is now an afforestation deficit amounting for fuelwood shortage of 18 million cubic metres per year in 1977 rising to a projected shortage of 20.7 mi.m<sup>3</sup> by 1985. The availability of firewood is now approaching a crisis point in some areas, specially in the regions of Mwanza, Dodoma, Mbeya Singida and Shinyanga. The degradation of the environment is being aggravated by excessive overgrazing, poor crop husbandry/cultivation and compaction resulting in damage to soil. (for data on afforestation and charcoal statistics, see Appendices B and C). It is predicted by energy experts that Mainland Tanzania will be almost a desert in 60 years time if urgent and continuous afforestation and forest conservation measures are not taken and implemented. Robert Lamb writing on the role of the tree Laucasia in the Tanzanian Daily News observed that:

Everyday, the peasant must go a little further away from the village to find firewood. Every day the charcoal burner charges a little more. Everyday, more forests are felled and soil erosion grows worse. This is the poor man's energy crises.

26 Candidate No. 00489, The choices in the Next Energy and Social Revolution, Unpublished Paper, World Future Studies Federation, Rome, 1977, p. 1

27 Mnzava, E.M. Village Afforestation in Dodoma District (mimeo) Ministry of Natural Resources and Tourism Dar es Salaam. 1977, pl.

28 See Lamb, R., "One Answer to African Energy Crisis," Daily News Tanganyika Standard Newspapers 11/10/78, Dar es Salaam, p.2

#### 4.3 Energy for Rural Industries

At the district and village levels, Tanzania's twenty year industrialization strategy (1975-1995) provides for the establishment and promotion of flexible, small scale rural industries<sup>29</sup> which require simple technology. This is one of the efforts to decentralise production enterprises to districts and villages. This move to decentralise industries, especially small scale industries, will certainly mean that the development of appropriate energy systems for rural small scale industries cannot now be left to be an ad hoc basis. Herein lies the importance of energy planning and development for the rural sector. Promotion of small scale industries is expected to raise the standard of living of masses of workers and peasants; to utilize existing or traditional skills and local resources for the promotion of socialism and self-reliance; increase employment opportunities in rural areas; bring about a 'technological revolution' in the rural areas through the dissemination of environmentally appropriate technologies; and to enhance a regional dispersal of industries.<sup>30</sup>

### V RENEWABLE ENERGY RESOURCES: POTENTIAL FOR APPLICATION IN RURAL AREAS

#### 5.1 Potential for Solar Energy Systems

It is considered appropriate to investigate other means of direct harnessing of solar energy. Our country is not very rich in every resource, but the solar intensity which it receives is comparatively high. This form of energy could be used on small scales in villages where it can be put to various uses. The sun effect on this country produces a variety of topographical features resulting in winds which can be harnessed and used for pumping water for domestic use and irrigation in the villages. It is clear therefore that the impact of the rural areas of our country as a result of the availability of less expensive and easily accessible form of energy can be quite profound.<sup>31</sup>

East Africa, of which Tanzania is a part, gets about 3,000 hours of sunshine per year giving 400 to 600 calories per cm<sup>2</sup> at ground level. So far, very little solar energy technologies can be used for heating water for domestic purposes, distillation of water for drinking, drying crops, water pumping, refrigeration and generating electricity in small units. However, Tanzania has already made a modest start in research and development of renewable alternative energy systems.

#### 5.2 Windpower development in Tanzania. (32)

Slightly over 50 per cent of Tanzania has favourable wind regimes to run windmills and good potential therefore exists for wind-driven generators not only for water pumping but also for supplying telecommunication stations like telephone repeaters in remote areas, as well as for supplying electricity to institutions like dispensaries and governmental offices. In 1974, there were thirty two windmills in mainland Tanzania. The majority of these windmills were located either in the semi-arid regions, of Shinyanga and Dodoma, for water pumping.

29 See TANU, Agizo la Kuanzisha Viwanda Vidogo Vidogo, TANU, Dar es Salaam 1973, p. 9

30 See Mramba, B.D., "Development of Small Scale Industries in Tanzania" in Rural Technology, op.cit.

31 Hon. Al-Noor Kassam, (Minister of Water, Energy and Minerals) Address in Tanzania National Scientific Research Council & U.S. National Academy of Sciences, Workshop on Solar Energy for the Villages of Tanzania, Dar es Salaam, 1977, pp.63 - 67.

32 This section has been shortened and adapted from Reichel, R.S., Wind Power Programmes in Tanzania, in Proceedings of the Second International Symposium on Wind Energy Systems, Amsterdam, 1978.

Shinyanga, various industrial made windmills have been tried like Northern Cross, Comet, Climax, Lubing etc. as well as locally produced ones. To date 1979, there are 60 installed, and operating, windmills, Tanzania. A small local firm, Ujuzi Leo industries, is now fabricating windmills at a cost of Tshs 18,000 (about US \$ 2250) compared to a cost of importing similar windmills at about eight times that price which is paid in foreign currency.

The Faculty of Agriculture, Forestry and Veterinary Science of the University of Dar es Salaam has been conducting research and design work on, which performed satisfactorily after a few design charcoal stoves. The Faculty of Engineering fabricated a windmill for water pumping in 1976. It pumped water for nearly two years for nearly two years for a small agricultural project in a periurban area of Dar es Salaam called Mndale. A recent study made at the same Faculty has shown conclusively that windpower is not only technically feasible in Tanzania but also more economical than an entirely diesel based system of same size for a village power station with a 45 kW wind-driven generators, bank of batteries, static DC-AC inverter and a small emergency diesel pump for back-up.

### 5.3 Biomass Energy Systems:

At present (end of 1979), Tanzania has nearly 50 biogas (gobar gas) plants operating. These are distributed all over Tanzania but mainly in the northern regions of Mwanza, Mara and Arusha. These biogas plants range in cost from Tsh. 5,400/= for 2m<sup>3</sup> capacity to Tsh. 35,000 for 10.5m<sup>3</sup> capacity at 1978 prices. There are tentative plans to instal more community size gas plants in village communities in the new capital city of Dodoma and in Shinyanga Region. These community size gas plants are designed to maximize and ease collection of dung. These community gas plants can generate more energy, at a cheaper price, than rural electrification because not only do you get gas for cooking or heating, but also you collect a by-product, suitable as a fertilizer, from the sludge which issues from the bio-digester drum. The Indian experience with biogas has shown that biogasification in the rural areas is a cheaper, better and simpler energy system than rural electrification.

A rural biogasification project has been planned by OXFAM for community institutions especially rural dispensaries and for some families in Shinyanga Region, in the northern part of Tanzania, which is one of the regions where fuelwood is already in short supply. It is planned to instal one-family size biogas digesters at official residences of Village Managers and in this way, it is hoped that the biogas technology will diffuse and will be socially accepted smoothly without much 'birth pangs'. Already an OXFAM sponsored biogas-utilization village has been identified and biogas plants are in operation at Makoko Village in Musoma, Mara Region, where the gas is used for domestic purposes. Another village, Majengo in Arusha region is using biogas for a few homes under the Arusha Appropriate Technology Project.

### 5.4 Other On-Going Rural Energy Studies:

#### 5.4.1 Rural Energy Research Centre:

The Tanzania National Scientific Research Council plans to launch a Solar Energy for Villages Pilot Project under which it is proposed to establish a Rural Energy Research Centre in one of Tanzania's semi-arid areas, Dodoma, so as to carry out research on deforestation and afforestation. The centre will also conduct field tests of photovoltaic and thermodynamic devices, and windmills for water pumping/electricity generation. Other areas of research will include field tests at the centre will also include biomass systems for family units and for rural communities. It is hoped that the project will also include a training part for rural technicians and workshop for local fabrication of various energy devices using, where possible, local resources.

#### 5.4.2 Tanzania Rural Energy Consumption Study:

A two year Rural Energy Consumption Study is in progress at the Institute of Development Studies. Principal Researcher D. Simon E. Nkonoki, the author of this paper. The results of the survey which examine energy resource demand and supply in fifteen villages will be used to forecast, and hence plan for, village energy needs including afforestation.

#### 5.4.3 Scope for Further Rural Energy Research and Development.

There is a lot of scope for studying various energy aspects in the rural areas almost from first principles. Energy for rural communities has always been taken for granted, and there is now an urgent need to educate the masses on intelligent consumption of energy for rural transportation, for agricultural and for small scale industrial activities. The following aspects need immediate attention.

- (i) Zonal variation in energy supply and demand. This should include the major energy deficit in each region and the potential renewable sources.
- (ii) Characteristic patterns of energy utilisation in rural and in urban areas and the impact of energy shortages.
- (iii) Comparison of calorific values of firewood, charcoal, coal, groundnut husks, cocoon husks etc.
- (iv) Further investigations of suitable collectors for photothermal conversion of solar radiation.
- v) An investigation of possibilities of fabricating local devices for solar cooking and for photovoltaic conversion of solar radiation.
- vi) Energy storage systems including food preservation systems like solar driers.
- vii) Further development of Family and Community size Biogas digesters.

#### VI. CONCLUDING REMARKS:

Tanzania, like most developing countries, has to raise agricultural productivity, improve quality and quantity of water supplies and has to be energy conscious. The challenge of Socialist rural transformation in Tanzania must be based on attaining a higher level of agricultural efficiency which includes research and the application of science and technology and hence technological change all of which must take cognizance of the political, and socio-economic parameters of the Tanzanian environment. The political and administrative leadership have an important role to play in the popularization of science and technology for rural areas as far as possible in research, development and implementation. Rural people should be involved as far as possible in research, development and implementation of technologically oriented projects so as to ensure smooth diffusion and acceptability of technical change among them.

Table 5: Water Supply Projects Developed by W.D. & I.D.: 1946-1975

Year	Earth Dams, Catchment Tanks,	Gravity Pipe lines and Pumped Supplies	Boreholes successfully Completed
1946	7	1	6
1947	12	1	10
1948	5	9	8
1949	10	11	13
1950	7	13	26
1951	5	18	19
1952	3	22	21
1953	9	41	32
1954	19	52	29
1955	10	22	22
1956	20	5	24
1957	29	15	30
1958	18	20	23
1959	19	30	19
1960	33	29	23
1961	13	44	26
1962	9	21	17
1963	8	21	13
1964	18	23	20
1965	9	20	35
1966	5	18	18
1967	6	71	28
1968	13	90	59
1969	14	118	101
1970	n.a	n.a	n.a
1971/73	n.a	277	473*
1974	n.a	33	66

Source: Water Development and Irrigation Division, Annual Reports, 1946-1969, (Dar es Salaam, Government Printer)., Ministry of Water Development and Power, Progress Report on Water Development Activities, 1973 (Mimeo). Economic Survery, 1974/1975. (Dar es Salaam Government Printer, 1975).

\* Includes failures..

n.a. = figures are not available

Table 7: Demand for fuelwood/Poles in Tanzania  
mainland by 1985.

Region	Demand m <sup>3</sup> x 1000	Potential Supply	Deficity m <sup>3</sup> x 1000	Required annual planting in hectares
Arusha	1882	753	1129	7000
Cost and				
Dar es Salaam	2134	573	1561	9760
Dodoma	2116	840	1276	6990
Iringa	2532	1413	1119	2580
Kigoma	1271	859	412	11880
Kilimanjaro	2010	109	1901	-
Lindi	1169	1169	-	10260
Mara	1736	94	1642	4720
Mbeya	2373	1618	755	3630
Morogoro	1929	1348	518	10080
Mtwara	1875	360	1613	18980
Mwanza	3146	109	3037	-
Rukwa	990	990	189	1180
Shinyanga	1770	1770	2069	12930
Singida	1272	1272	176	1100
Tabora	2361	2185	1649	10310
Tanga	2208	559	1620	10130
West Lake	1897	227	-	-
<b>TOTAL</b>	<b>37404</b>	<b>16625</b>	<b>20779</b>	<b>129570</b>

Source: Forest Division, Ministry of Natural Resources and Tourism,  
Dar es Salaam, 1978.

Table 8: Projections of Consumption of Fuelwood  
Charcoal in Tanzania (in cubic metres)

	Year 1970	1985	2000
Fuelwood	29,660,000	32,688,000	36,975,000
Charcoal	820,000	3,979,000	7,979,000
<b>TOTAL</b>	<b>30,480,000</b>	<b>36,647,000</b>	<b>44,788,000</b>
Estimated Population	15,000,000	19,700,000	30,600,000

Source: Forest Division, Ministry of Natural Resources and Tourism,  
Dar es Salaam 1978/

Table 9:

Electricity demand Estimation for Villages in Tanzania

Appendix D.

Type of consumers	Installed Capacity	Daily kWh Requirements	Monthly kWh Requirements	Annual kWh Requirements	Remarks
Domestic and lighting Ref. -garation and Cooking Farms and Workshop machines Water supply (50m <sup>3</sup> per day, 10-100m pumping height)	4-6kW 3-4kW 5-10kW	8-10kWh 36-48kWh 2-60kWh	240-300kWh 1080-1440kWh 600-1800kWh	1500-2200kWh 13000-18000 kWh 7000-22000	Priority 1 Priority 2 Priority 3
Irrigation (200m <sup>3</sup> per day, 50-100 pumping height)	1-10kW	3-30kWh	90-900kWh	1000-10000kWh	Priority 1
Telecommunications or Audio-Visual Equipment	less than 1kW	1-2kWh	3-60kWh	360-720kWh	Priority 3
Total (without irrigo.)	14-31kW	66-150kWh	1980-4500kWh	23-53GWh	
Total (with irrigation)	24-51kW	126-270kWh	3780-8100kWh	25-97GWh	

Source: Reichel, R., op. cit. (adapted).

Table 10: Summary of Some of the Preliminary Findings in Using the Mkonki-Sikwese Solar Cooker:

Dish	REMARKS		
	Average Maximum Ambient Temp.	Average Maximum Cooker Temp, at Base	Average Time to Cook/Boil
Ugali (Maize Stiff Porridge)	33.5°C	96°C	2hrs 45 minutes
Ugali-Muhogo (Cassava Stiff Porridge)	33.5°C	138°C	1hrs 45 minutes
Eggs	34.5°C	94°C	1hrs 30 minutes
Eggs	34.5°C	94°C	2hrs 00 minutes
Irish Potatoes (1 cm. thick slices)	33.5°C	95°C	1hrs 45 minutes
Maboga na bamia (Pumpkin leaves and Abelmoschus Esculentus)	33.5°C	96°C	1hrs 30 minutes
Rice (boiled)	33.5°C	96°C	2hrs 45 minutes
Beans	46.5°C	98°C	4hrs 45 minutes
Boiled Fish (Fresh)	33.0°C	96°C	2hrs 45 minutes
Baked Fish (tasi)	34.0°C	100°C	2hrs 45 minutes
Goat's liver (baked)			

Ugali is a Swahili word for stiff porridge made out of maize, equisava or millet flour. Sufuria is a Swahili word which means on aluminium cooking pot.

1,440,000	1,540,000	1,640,000	1,740,000	1,840,000	1,940,000	2,040,000	2,140,000	2,240,000	2,340,000	2,440,000	2,540,000	2,640,000	2,740,000	2,840,000	2,940,000	3,040,000	3,140,000	3,240,000	3,340,000	3,440,000	3,540,000	3,640,000	3,740,000	3,840,000	3,940,000	4,040,000	4,140,000	4,240,000	4,340,000	4,440,000	4,540,000	4,640,000	4,740,000	4,840,000	4,940,000	5,040,000	5,140,000	5,240,000	5,340,000	5,440,000	5,540,000	5,640,000	5,740,000	5,840,000	5,940,000	6,040,000	6,140,000	6,240,000	6,340,000	6,440,000	6,540,000	6,640,000	6,740,000	6,840,000	6,940,000	7,040,000	7,140,000	7,240,000	7,340,000	7,440,000	7,540,000	7,640,000	7,740,000	7,840,000	7,940,000	8,040,000	8,140,000	8,240,000	8,340,000	8,440,000	8,540,000	8,640,000	8,740,000	8,840,000	8,940,000	9,040,000	9,140,000	9,240,000	9,340,000	9,440,000	9,540,000	9,640,000	9,740,000	9,840,000	9,940,000	10,040,000	10,140,000	10,240,000	10,340,000	10,440,000	10,540,000	10,640,000	10,740,000	10,840,000	10,940,000	11,040,000	11,140,000	11,240,000	11,340,000	11,440,000	11,540,000	11,640,000	11,740,000	11,840,000	11,940,000	12,040,000	12,140,000	12,240,000	12,340,000	12,440,000	12,540,000	12,640,000	12,740,000	12,840,000	12,940,000	13,040,000	13,140,000	13,240,000	13,340,000	13,440,000	13,540,000	13,640,000	13,740,000	13,840,000	13,940,000	14,040,000	14,140,000	14,240,000	14,340,000	14,440,000	14,540,000	14,640,000	14,740,000	14,840,000	14,940,000	15,040,000	15,140,000	15,240,000	15,340,000	15,440,000	15,540,000	15,640,000	15,740,000	15,840,000	15,940,000	16,040,000	16,140,000	16,240,000	16,340,000	16,440,000	16,540,000	16,640,000	16,740,000	16,840,000	16,940,000	17,040,000	17,140,000	17,240,000	17,340,000	17,440,000	17,540,000	17,640,000	17,740,000	17,840,000	17,940,000	18,040,000	18,140,000	18,240,000	18,340,000	18,440,000	18,540,000	18,640,000	18,740,000	18,840,000	18,940,000	19,040,000	19,140,000	19,240,000	19,340,000	19,440,000	19,540,000	19,640,000	19,740,000	19,840,000	19,940,000	20,040,000	20,140,000	20,240,000	20,340,000	20,440,000	20,540,000	20,640,000	20,740,000	20,840,000	20,940,000	21,040,000	21,140,000	21,240,000	21,340,000	21,440,000	21,540,000	21,640,000	21,740,000	21,840,000	21,940,000	22,040,000	22,140,000	22,240,000	22,340,000	22,440,000	22,540,000	22,640,000	22,740,000	22,840,000	22,940,000	23,040,000	23,140,000	23,240,000	23,340,000	23,440,000	23,540,000	23,640,000	23,740,000	23,840,000	23,940,000	24,040,000	24,140,000	24,240,000	24,340,000	24,440,000	24,540,000	24,640,000	24,740,000	24,840,000	24,940,000	25,040,000	25,140,000	25,240,000	25,340,000	25,440,000	25,540,000	25,640,000	25,740,000	25,840,000	25,940,000	26,040,000	26,140,000	26,240,000	26,340,000	26,440,000	26,540,000	26,640,000	26,740,000	26,840,000	26,940,000	27,040,000	27,140,000	27,240,000	27,340,000	27,440,000	27,540,000	27,640,000	27,740,000	27,840,000	27,940,000	28,040,000	28,140,000	28,240,000	28,340,000	28,440,000	28,540,000	28,640,000	28,740,000	28,840,000	28,940,000	29,040,000	29,140,000	29,240,000	29,340,000	29,440,000	29,540,000	29,640,000	29,740,000	29,840,000	29,940,000	30,040,000	30,140,000	30,240,000	30,340,000	30,440,000	30,540,000	30,640,000	30,740,000	30,840,000	30,940,000	31,040,000	31,140,000	31,240,000	31,340,000	31,440,000	31,540,000	31,640,000	31,740,000	31,840,000	31,940,000	32,040,000	32,140,000	32,240,000	32,340,000	32,440,000	32,540,000	32,640,000	32,740,000	32,840,000	32,940,000	33,040,000	33,140,000	33,240,000	33,340,000	33,440,000	33,540,000	33,640,000	33,740,000	33,840,000	33,940,000	34,040,000	34,140,000	34,240,000	34,340,000	34,440,000	34,540,000	34,640,000	34,740,000	34,840,000	34,940,000	35,040,000	35,140,000	35,240,000	35,340,000	35,440,000	35,540,000	35,640,000	35,740,000	35,840,000	35,940,000	36,040,000	36,140,000	36,240,000	36,340,000	36,440,000	36,540,000	36,640,000	36,740,000	36,840,000	36,940,000	37,040,000	37,140,000	37,240,000	37,340,000	37,440,000	37,540,000	37,640,000	37,740,000	37,840,000	37,940,000	38,040,000	38,140,000	38,240,000	38,340,000	38,440,000	38,540,000	38,640,000	38,740,000	38,840,000	38,940,000	39,040,000	39,140,000	39,240,000	39,340,000	39,440,000	39,540,000	39,640,000	39,740,000	39,840,000	39,940,000	40,040,000	40,140,000	40,240,000	40,340,000	40,440,000	40,540,000	40,640,000	40,740,000	40,840,000	40,940,000	41,040,000	41,140,000	41,240,000	41,340,000	41,440,000	41,540,000	41,640,000	41,740,000	41,840,000	41,940,000	42,040,000	42,140,000	42,240,000	42,340,000	42,440,000	42,540,000	42,640,000	42,740,000	42,840,000	42,940,000	43,040,000	43,140,000	43,240,000	43,340,000	43,440,000	43,540,000	43,640,000	43,740,000	43,840,000	43,940,000	44,040,000	44,140,000	44,240,000	44,340,000	44,440,000	44,540,000	44,640,000	44,740,000	44,840,000	44,940,000	45,040,000	45,140,000	45,240,000	45,340,000	45,440,000	45,540,000	45,640,000	45,740,000	45,840,000	45,940,000	46,040,000	46,140,000	46,240,000	46,340,000	46,440,000	46,540,000	46,640,000	46,740,000	46,840,000	46,940,000	47,040,000	47,140,000	47,240,000	47,340,000	47,440,000	47,540,000	47,640,000	47,740,000	47,840,000	47,940,000	48,040,000	48,140,000	48,240,000	48,340,000	48,440,000	48,540,000	48,640,000	48,740,000	48,840,000	48,940,000	49,040,000	49,140,000	49,240,000	49,340,000	49,440,000	49,540,000	49,640,000	49,740,000	49,840,000	49,940,000	50,040,000	50,140,000	50,240,000	50,340,000	50,440,000	50,540,000	50,640,000	50,740,000	50,840,000	50,940,000	51,040,000	51,140,000	51,240,000	51,340,000	51,440,000	51,540,000	51,640,000	51,740,000	51,840,000	51,940,000	52,040,000	52,140,000	52,240,000	52,340,000	52,440,000	52,540,000	52,640,000	52,740,000	52,840,000	52,940,000	53,040,000	53,140,000	53,240,000	53,340,000	53,440,000	53,540,000	53,640,000	53,740,000	53,840,000	53,940,000	54,040,000	54,140,000	54,240,000	54,340,000	54,440,000	54,540,000	54,640,000	54,740,000	54,840,000	54,940,000	55,040,000	55,140,000	55,240,000	55,340,000	55,440,000	55,540,000	55,640,000	55,740,000	55,840,000	55,940,000	56,040,000	56,140,000	56,240,000	56,340,000	56,440,000	56,540,000	56,640,000	56,740,000	56,840,000	56,940,000	57,040,000	57,140,000	57,240,000	57,340,000	57,440,000	57,540,000	57,640,000	57,740,000	57,840,000	57,940,000	58,040,000	58,140,000	58,240,000	58,340,000	58,440,000	58,540,000	58,640,000	58,740,000	58,840,000	58,940,000	59,040,000	59,140,000	59,240,000	59,340,000	59,440,000	59,540,000	59,640,000	59,740,000	59,840,000	59,940,000	60,040,000	60,140,000	60,240,000	60,340,000	60,440,000	60,540,000	60,640,000	60,740,000	60,840,000	60,940,000	61,040,000	61,140,000	61,240,000	61,340,000	61,440,000	61,540,000	61,640,000	61,740,000	61,840,000	61,940,000	62,040,000	62,140,000	62,240,000	62,340,000	62,440,000	62,540,000	62,640,000	62,740,000	62,840,000	62,940,000	63,040,000	63,140,000	63,240,000	63,340,000	63,440,000	63,540,000	63,640,000	63,740,000	63,840,000	63,940,000	64,040,000	64,140,000	64,240,000	64,340,000	64,440,000	64,540,000	64,640,000	64,740,000	64,840,000	64,940,000	65,040,000	65,140,000	65,240,000	65,340,000	65,440,000	65,540,000	65,640,000	65,740,000	65,840,000	65,940,000	66,040,000	66,140,000	66,240,000	66,340,000	66,440,000	66,540,000	66,640,000	66,740,000	66,840,000	66,940,000	67,040,000	67,140,000	67,240,000	67,340,000	67,440,000	67,540,000	67,640,000	67,740,000	67,840,000	67,940,000	68,040,000	68,140,000	68,240,000	68,340,000	68,440,000	68,540,000	68,640,000	68,740,000	68,840,000	68,940,000	69,040,000	69,140,000	69,240,000	69,340,000	69,440,000	69,540,000	69,640,000	69,740,000	69,840,000	69,940,000	70,040,000	70,140,000	70,240,000	70,340,000	70,440,000	70,540,000	70,640,000	70,740,000	70,840,000	70,940,000	71,040,000	71,140,000	71,240,000	71,340,000	71,440,000	71,540,000	71,640,000	71,740,000	71,840,000	71,940,000	72,040,000	72,140,000	72,240,000	72,340,000	72,440,000	72,540,000	72,640,000	72,740,000	72,840,000	72,940,000	73,040,000	73,140,000	73,240,000	73,340,000	73,440,000	73,540,000	73,640,000	73,740,000	73,840,000	73,940,000	74,040,000	74,140,000	74,240,000	74,340,000	74,440,000	74,540,000	74,640,000	74,740,000	74,840,000	74,940,000	75,040,000	75,140,000	75,240,000	75,340,000	75,440,000	75,540,000	75,640,000	75,740,000	75,840,000	75,940,000	76,040,000	76,140,000	76,240,000	76,340,000	76,440,000	76,540,000	76,640,000	76,740,000	76,840,000	76,940,000	77,040,000	77,140,000	77,240,000	77,340,000	77,440,000	77,540,000	77,640,000	77,740,000	77,840,000	77,940,000	78,040,000	78,140,000	78,240,000	78,340,000	78,440,000	78,540,000	78,640,000	78,740,000	78,840,000	78,940,000	79,040,000	79,140,000	79,240,000	79,340,000	79,440,000	79,540,000	79,640,000	79,740,000	79,840,000	79,940,000	80,040,000	80,140,000	80,240,000	80,340,000	80,440,000	80,540,000	80,640,000	80,740,000	80,840,000	80,940,000	81,040,000	81,140,000	81,240,000	81,340,000	81,440,000	81,540,000	81,640,000	81,740,000	81,840,000	81,940,000	82,040,000	82,140,000	82,240,000	82,340,000	82,440,000
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Table 21:

TWENTY YEARS RURAL WATER SUPPLY SCHEDULE

Year	ESTIMATED RURAL POPULATION	IF 300,000 People with Water Supply	SUPPLIED ANNUALLY People without Water Supply	IF 1,219,000 SUPPLIED ANNUALLY People with Water Supply	People without Water Supply
1971	12,280,000	1,440,000	11,540,000	1,440,000	11,540,000
1972	13,340,000	1,710,000	11,630,000	1,710,000	11,630,000
1973	12,630,000	1,010,000	11,680,000	2,010,000	11,680,000
1974	14,060,000	1,110,000	12,750,000	2,310,000	11,750,000
1975	14,440,000	1,610,000	12,830,000	2,610,000	11,830,000
1976	14,830,000	1,910,000	12,920,000	2,829,000	11,931,000
1977	15,230,000	2,610,000	12,620,000	3,048,000	10,182,000
1978	15,640,000	3,510,000	12,130,000	6,247,000	9,773,000
1979	16,060,000	3,810,000	12,250,000	7,403,000	8,574,000
1980	16,490,000	4,110,000	12,380,000	8,505,000	7,705,000
1981	16,940,000	4,410,000	12,530,000	9,624,000	7,015,000
1982	17,400,000	4,710,000	12,690,000	1,143,000	6,257,000
1983	17,870,000	5,010,000	12,860,000	2,632,000	7,508,000
1984	18,350,000	5,310,000	13,040,000	3,581,000	4,769,000
1985	18,850,000	5,510,000	13,240,000	4,800,000	4,050,000
1986	19,360,000	5,910,000	13,450,000	6,019,000	3,341,000
1987	19,880,000	6,670,000	13,210,000	17,218,000	2,642,000
1988	20,410,000	6,510,000	13,900,000	18,451,000	1,953,000
1989	20,950,000	6,810,000	14,150,000	19,676,000	1,284,000
1990	21,500,000	7,110,000	14,420,000	20,845,000	635,000
1991	22,110,000	7,410,000	14,700,000	22,110,000	-----

Table 12 Summary of main characteristics of the water projects in Eastern Rural District

Appendix 9.

Name of water project	No. of people in each project	Animals to be supplied with water					Design of water project			Working condition of the project
		Households	People	Cattle	Goats	Sheep	Donkeys	Storage tank	Piped project	
1. Chidilo	458		2290	5353	573	231	60	Small tank	No	Working
2. Chipanga	610		3050	4745	2160	514	45	Small tank	Yes	Working
3. Ibiwa	780		3900	7062	3583	1101	165	no storage tank	No	not working
4. Ibugu	323		2130	2458	1039	361	42	none	not piped	Working
5. Iringa Mvumi	824		4120	3177	1678	932	26	one storage	pipd	not working
6. Itiso	570		2220	5818	1873	680	68	one storage tank	pipd	Working
7. Kigwe	1115		5575	5353	2099	869	71	one storage tank	pipd	Working
8. Nkulugano	680		3400	4823	1434	690	101	two storage tanks	pipd	not working
9. Mpinja	620		2575	4169	1534	538	127	two storage tanks	pipd	not working
10. Kisima cha ndogo	595		3000	2835	611	324	70	none	not pipd	not working
11. Imaiti	681		3405	3595	1510	209	44	none	not pipd	not working
12. Makanda	655		3175	5136	1379	319	189	none	not pipd	not working
13. Makangwa	604		3020	3476	1290	244	150	one storage tanks	pipd	not working
14. Manzese	504		2520	2654	718	218	21	none	not pipd	working
15. Maya Maya	410		2600	2835	2306	827	25	one storage tanks	pipd	not working
16. Mkakatika	4200		2100	5385	1184	576	67	one storage tank	not pipd	not working
17. Mkola	557		2785	6778	1831	684	128	no storage tank	not pipd	not working
18. Mloda	472		2460	4968	812	120	43	no storage tank	not pipd	not working properly
				1600	589	396	6	two storage tanks	pipd	not working

Table of Water Project Households People- Cattle Stables Spec. Donkeys Storage tank Piped project Water points

22. Miso	1016	2905	3895	787	201	91	one storage tank	several	not working
23. Mundemu	523	2905	1262	1045	173	47	one storage tank	8 waterpoints	not working
24. Mwitikira	604	3060	2960	635	78	22	one storage tank	several	working
25. Mzongole	570	2050	3736	1857	771	82	none	none	Working
26. Magulo	562	2210	1273	1030	104	50	none	none	not working
27. Ndebe	609	3045	1053	863	473	17	none	none	" " " proper
28. Ndogowe	285	1425	7493	2100	700	115	none	none	working
29. Nkambaku	393	2100	6466	597	280	31	none	none	not working
30. Sasajila	376	1495	1325	5537	389	13	none	none	working
31. Segala	330	1650	974	680	97	25	one storage tank	several	not working
32. Soluwa	385	1925	1773	1023	244	24	no storage tank	none	not working
33. Zajilwa	614	-	1899	60	73	45	one storage tank	6 standpipes	not working

Total	19,308	85,680	127,280	42,447	13,877
No. of animals in Projects Without storage tank -			69,192	21,131	7,039
No. of people and animals		57,065	80,183	28,399	8,820
In projects not working					
Percentage of people and animals without water		66.5%	63%	67%	63.5%

Source: District Development Director "s office, Population Summary Sheets, July, 1977, and Field Surveys Conducted October - December 1977.

22nd October, 1975

Ndugu H. Sinare,  
Faculty of Law,

Dear Hawa,

Sometime ago an economist engaged in doctoral research in Tanzania asked me to look carefully at your paper "How the World Bank Serves Imperialist Exploitation in Tanzania." He had obtained a copy of the paper at the Social Sciences Conference but he had not been able to attend the session at which you presented it. He pointed out to me that there are errors of calculation in your statistical data which are fairly fundamental to your line of argument. The problem lies in your calculation of "interest or charge annually" and "interest or charge per period." The first figure is calculated from the rate of interest on the amount lent (the principal). This figure would not be the interest charged annually - rather it would be the interest charged only in the first year when the principal owing was the total amount of the loan. Unless World Bank loan agreements are completely different from usual capitalist lending practices, the interest is calculated on a per annum basis and there will be a schedule or table for repayments. Let us consider loan 1 from your Table I with two different repayment levels. First let us assume that \$520,000 is repaid each year from 1971, and secondly let us assume that \$ 350,000 is repaid each year. The repayment tables would be as follows:

A. Hypothesis 1 - \$ 520,000 repaid annually.

<u>Year</u>	<u>Principal Owing</u>	<u>Interest Paid</u>	<u>Principal Paid</u>
1971	5,200,000	312,000	208,000
1972	4,992,000	299,520	220,480
1973	4,771,520	286,291.2	233,708.8
1974	4,537,811.2	272,268.67	247,731.33
1975	4,290,079.9	257,404.79	262,595.21
1976	4,027,484.7	241,649.08	278,350.92

And, so on. After 6 years at this rate of repayment the interest paid would have been 1,669,133.5 whereas on your calculations it would be 1,872,000. Of course, as the years go by the interest paid would steadily reduce as the rate of principal repayments increased.

B. Hypothesis 2 - \$ 350,000 repaid annually.

<u>Year</u>	<u>Principal Owing</u>	<u>Interest Paid</u>	<u>Principal Paid</u>
1971	5,200,000	312,000	38,000
1972	5,162,000	309,720	40,280
1973	5,121,720	307,303.2	42,696.8
1974	5,079,023.2	304,741.39	45,258.61
1975	5,033,764.6	302,025.87	47,974.13
1976	4,985,790.5	299,147.43	50,852.57

(Calculations as per my pocket calculator which in that capitalist consumer centre, Singapore, cost the equivalent of about T. \$ 40!)

In order to find the correct figures for your Table 1 you need know the required rate of repayment according to the loan agreement. What is absolutely certain is that the total of "interest or charge plus principal" will be much less than the figures you arrive at.

...then it is not correct to say that "The capital which the world brings into Tanzania is usually almost half of that which it takes (p.8) and all your calculations on pp.12 & 13 must be wrong. You take no note of the fact that most of the loans and credits are directly productive sectors of the economy. Thus in the 1970, the line 10 of your Table for tea is put to good use the foreign Tanzania small holder tea farmers will be vastly more than the policy of .75% charge plus principal repayments. The indebtedness problem arises with World Bank loans if the money is not "put to good use," as Turkey, for example, got into trouble because so much of the loan is siphoned off by corruption and inefficiency. Then with 1 there should be no problem for TAZNECO provided the plant being used is operating and generating revenue by or within the 5 year period. But of course if the project is only half finished generating no revenue then there will be problems in finding the way to repay the loan. This is where some countries get into loans repay loans which is a vicious circle. But this really "should" only ever happen with World Bank facilities on such "soft" terms as are indicated in Table 1. Commercial loan transactions require payments to commence immediately and of course interest rates would be much higher in these inflationary times.

All the above is no technical quibble. In fact I submit that the argument is round the wrong way. The problem with the World Bank is the reason that it can dictate so freely - as you illustrate in respect to the Kigoma credit (p.15) - is precisely because its terms are so 'soft'. The World Bank is a very useful instrument of imperialism, in other words, not because it extracts large sums of interest but rather because it engages in financing of such activities as will stretch and strengthen the dependency of countries like Tanzania on imperialist finance capitalists by directing the economy along lines amenable to the continuing extraction of superprofits. It is not only Tanzania that "small-holder tea farmers" are being encouraged - of course the more tea that different Third World countries produce, more certain it is that real costs of the commodity will not rise and will probably be consistently lowered for the capitalist firms controlling that commodity. There lies the problem - and the exploitative nature of the World Bank as an instrument of imperialist finance capital - NOT the terms of the loans themselves.

I hope that my assumptions are correct in pointing out what I think are your miscalculations and I hope that this will be useful for assisting any rewriting you might do to publish parts of the dissertation. I am sending a copy to your erstwhile supervisor who will be able to point out that I have got it all wrong. Anyway, please let us discuss the matter sometime.

Yours sincerely

David V. Williams

o Ndugu J.L. Kanywanyi  
Faculty of Law.

S My discussion of the figures uses the capitalist terminology, of course. But then you need to work through the capitalist way of presenting it and to understand how the system operates. It makes it easier then to attack their system. The reason that the proletariat ought to be the most revolutionary class is because from practice that class understands the capitalist system and its inherent contradictions.

(ii) "Argument is spurious, bourgeois"

14th January, 1961

Ndugu David Williams,  
Faculty of Law,  
P.O. Box 35093,  
DAR ES SALAAM.

I am writing in response to your letter of 22nd October, 1960. I am responding so late because at the time I received your letter, a lot of Faculty work pending which required my immediate attention. I have reduced quite a lot of it and now I can pay attention to your letter.

The World Bank's lending is regulated generally by Loan Regulations Nos. 2 and 3 and Credit Regulations No. 1 and 2. One for lending to member states and the other to non-members whose loans or credits are guaranteed by the member state to which they are situated. This care of multinational corporations' borrowings from the Bank as the case study of Brazil in my thesis indicates. Specifically loans and credits are regulated by their separate Agreements.

Credits are interest free and the borrower only pays  $\frac{1}{4}$  of 1% per year as service charge.

When a loan is granted to a borrower and a loan account is opened by the Bank in the name of the borrower, the loan amount can then be withdrawn as provided for in the loan agreement.

A commitment charge at a rate specified in the loan agreement is paid on the withdrawal amount of the loan. The charge accrues from the date after the date the loan Agreement to the respective dates on which amounts shall be withdrawn by the borrower from the Loan Account. The charge is payable in the currency in which the principal is denominated which is foreign exchange. The interest is paid semi-annually.

The interest rate of a loan is specified in the loan Agreement and is payable on the Loan Account outstanding from time to time. To calculate this amount outstanding, one must have the disbursement schedule as well as the debt repayment schedule. The two could not be obtained by the author. This was made clear immediately after the conference by the author. The above information below my tables. Without the two schedules, the calculation of interest charge can be entirely correct.

The interest accrues from the dates on which amounts shall be withdrawn, computed against a 360 day year or twelve 30 day months. The repayment of the principal is dependant upon the amortization schedule to the loan Agreement - and is repaid in the several currencies withdrawn from the loan account. Again the author could not get all the loan credit Agreements so as to be able to prepare a comprehensive amortization schedule for all loans and credits indicated on the table.

In the absence of the three, namely, the amortization debt repayment and disbursement schedules I could not show what is exactly paid by the borrower of interest or service charge. You can note that, for similar reasons, I did not include in the table the commitment charges for loans. The only viable way for me was to make a calculation of the interest and charge as follows.

I divided the loan or credit amount by the interest rate charge and got annual charge which I multiplied by the number of years within which the loan matures. Consequently, the charge annually became the same. If I were to calculate my interest against the disbursement schedule I would definitely get less amount as the loan is successively withdrawn.

The table's main purpose is to show that the World Bank does directly repatriate surplus by way of interest and service charges. But the amount of capital brought in is far less than that taken out. This was my first point which you don't seem to reject.

The other point which is well spelt out both in my thesis and my paper is the fact that the World Bank is an instrument by which the capitalist countries, particularly the U.S.A. can export their capital to the oppressed countries, who form 90% of the World Bank's borrowers. It serves as an instrument of exploitation by facilitating a socio-economic relationship between the capitalist and oppressed countries which already existed before its establishment. Its real function being reflected in the type of projects it finances. This was my second point. My thesis both in the dissertation and the paper is very clear on this. While the World Bank's publications (annual reports, Sector papers, Reports of Annual Meetings and its news release) want us to believe that it is a catalyst of economic development of the oppressed countries, my thesis is based on the premise that the World Bank operates within a capitalist socio-economic structure and objectively facilitates that structure. Therefore the World Bank cannot under the present economic structure facilitate economic development for its borrowers.

I went as far as examining the events that led to its establishment in their socio-economic context. I showed how the World Bank's decisions, its borrowed capital from capitalist money markets, its subscribed capital mainly from the capitalist countries - see Chapters 1 & 2 of my dissertation, and its management are controlled by its capitalist member states. I went further, to show two categories of the World Bank's borrowers, namely,

(a) Its lending to the capitalist countries for reconstruction and explained why the reconstruction took a short period and why the World Bank in that context facilitated genuine economic development for these countries.

(b) Its lending therefrom to oppressed countries (for 35 years now) and demonstrated why these countries grow poorer and underdevelop while the capitalist countries grow richer. I demonstrated the general poverty of the people therein which I found to be Over 85% of the people in these countries to be absolutely poor. (See my Chapters 1 & 2 of the dissertation and pp. 1-7 of my paper for a comprehensive picture).

Then I demonstrated that it is impossible for an oppressed country to attain a genuine economic development relying on World Bank loans.

(a) The World Bank facilitates the neo-colonial relationship between capitalist and oppressed countries by financing the increased production of primary commodities and extractive progressive industry.

(b) It directly repatriates surplus by way of interest, commitment and service charges.

These facts are demonstrated in two case studies - Brazil and Tanzania. (Refer to Chapter 3 of my dissertation for reasons for selecting Brazil as a case study).

Consequently, my thesis is not based at all on the exploitative nature of the World Bank as an instrument of imperialist finance capital nor on the terms of the loans themselves. (p.2 of your letter) but rather on the premise that the World Bank facilitates exploitation of its oppressed member states who are its main borrowers and that instead of being a catalyst of development it is an instrument of underdevelopment for these borrowers. (Refer Abstract introduction - My dissertation)

(1) Your criticisms seem to be based mainly on the comments of the economist (P.1 of your letter) and not on your own assessment the understanding of both the paper and the dissertation. Had you read them both, your criticisms would have been better.

(2) Your criticisms are therefore based on an assumption which you assume is right and the whole of your calculations are based on this assumption!!

(3) From your letter you indicate that the World Bank should not be criticised because it is exploitative (P.2 para 2 of your letter)

(4) You are not (from your letter) saying that the World Bank is not exploitative but by clear implication your argument is that it is not. (Refer to your letter P.2 lines 3-12 from the top of the page); yet that argument is not seriously made! (see Para 1 on page 2 of your letter which starts with "All the above...") This is because in that para you admit that the World Bank facilitates exploitation. But what is exploitation? Does it not mean the appropriation and expropriation of surplus value? Does exploitation therefore cease to be if the appropriation is % of 1% or 8.85% or 4%; "soft" or "hard" terms? No doubt your quarrel with my figures is not that they are merely not exact but that the surplus value which the World Bank appropriates and expropriates is less than my figures would want us to believe! And you call that miscalculations, fairly fundamental, to my line of argument!! (See p.1 of your letter 4th sentence). You stress in that sentence that in the calculations lies my problem which lead to (p.2 1st para 1st two sentences) my formulating my argument round the wrong way!!

(5) Perhaps it is of interest to you to note also that the World Bank as an institution operating within monopoly capitalism the interest and charges it charges are aspects of the general monopoly capital superprofit which is extracted from the whole context of finance capital circulation generally and in Tanzania in particular.

(6) Why you chose to miss my premise beats my understanding. The points are clear. First that the World Bank directly exploits its oppressed member borrowers by way of interest and charges. The rate of interest it charges on loans is objectively determined by its borrowing rate - since it has to borrow and lend commercially. If the borrowing rate is high the World Bank must raise its lending rate even higher so as to be able to pay back the borrowed capital. (See my dissertation Chapters 1 & 2).

Second, the World Bank facilitates exploitation in the oppressed member countries by financing primary commodities, extractive and processing industries. It does not facilitate the development of basic industries which is the basis for any meaningful economic development.

To prove my premise I examined two case studies - Brazil and Tanzania.

I do not dispute that facilitating the production of primary commodities, or extractive industries or processing industries is important nor do I dispute the fact that primary commodities are directly productive (see p. 2 of your letter) but the fact that these cannot act as the basis for the economic development of the oppressed countries but underdevelop them, by perpetuating the present socio-economic relations.

(7) On p. 2 of your letter you referred to "most loans and credits are in directly productive sectors of the economy". You do not show what these productive sectors are. Are they roads, production, commerce? The question is in what form are these sectors to the overall economic structure stand? Do they facilitate economic development or don't they?

(8) On the same page 2 of your letter, you seem to use catchy words which you don't substantiate nor explain. For instance, you argue (on that page) that, "the indebtedness problems only arise with the World Bank Loans if the money is not put to good use. Zaire and Turkey, for example, get into trouble because so much of the money lent is siphoned off by corruption and inefficiency".

First this is a statement which must have been made in accordance with the terms of World Bank's Articles of Agreement, the Loan and credit conditions and what is generally included in separate loan and credit agreements. (See Chapters 1, 2, 4 and 5 of my dissertation) you will find that the World Bank monitors the utilisation of its loans and credits and implementation of its supported projects very closely. If siphoning of capital is made by corruption it is really minimal.

For further information - See World Bank Appraisal Reports and Supervisory Reports).

Again on p.2 you argue that "..., if the project is only half finished and generating no revenue then there will be problems in finding the money to repay the loan. This is where some countries get into trouble to repay loans which is a vicious circle. But this really 'should' never happen with World Bank facilities on such 'soft' terms as those indicated in Table 1".

You argue that once the project generates revenue then the borrower would have no problem repaying the loan. You are forgetting that the loan and interest or charge repayment is made in the currency to which they were denominated. For Tanzania, for instance, to pay part of the principal and interest in a given year, she must earn foreign exchange out of which she pays. If it is not only one loan or credit that matures at any one time, as their number grows so is the difficulty of debt servicing. That is why the World Bank's Appraisal report of the Tanzanian economy advised recourse to external financing but warned that it should be on an interest free basis. Hence the many World Bank credits to Tanzania.

Besides, should you care to analyse the contents of the Program Loan No. 23:- Table 1 in my paper of \$30, million at 8% interest rate and program credit of \$15 million, in 1977 you will find out that they were a loan and a credit for payments for imports and if you examine the 1974 imports you will find out that most of the goods imported were consumer necessities. So a country is forced to borrow for payment of goods. Where a country borrows for the payment of loans or credits then you can be sure that such a country is in critically bad foreign exchange position. This is because in almost every oppressed member borrower's country, World Bank's loan or credit repayment, is given priority. (Get in touch with Central Bank - Foreign exchange control Department or the Treasury External Finance Department for information on this).

(10) Lastly you apologized because in your discussion of figures you had to use capitalist terminology, but what is ironical, is the fact that your arguments are capitalist.

Since you based your criticisms on mere assumptions that your arguments were right, they become wrong once the assumptions have been proved wrong.

But the only point you might have is that the amount of interest and charge the World Bank charges against the loans and credits in Table 1 of my paper or table 16 of my dissertation is much less than indicated. The reasons being that I could not get amortization, debt repayment and disbursement schedules which are indispensable for an exact calculation of interests or charges. Therefore, the above is a fault which could not be helped.

I could have discussed with you these points orally but since you had put your criticisms in writing and copied them to my supervisor, I am compelled to put my answer in the same form. Only that I will also send an extra copy for your unnamed economist.

H. Sinare,  
FACULTY OF LAW

TO STATE NO. 1

On this yet, we received a donation of books to support the  
of the activity of the University of the South, Brazil,  
on the authorities to celebrate National Day of  
Department of Literature.

... of Prof. Ngũgĩ is not new in the University of Nairobi  
... authorities abducted him on account of a letter he  
... whose story and the struggles of the Kenyan people  
... explains in his article following the arrest of the  
... of literature and Kisumu, along with the  
... community not for a broad-based discussion of the  
... Kenyan patriot. This discussion was advertised  
... meeting and produced in Zinduko Journal of the  
... this university, in 1978. A petition was signed

before we went to press, Kenyan President Daniel arap Moi had been elected along with the civil servants union, for their support in politics' and failing to represent their members in a trade union sense). This action is of course contrary to the efforts of the teachers, whose many motions to that effect are documented in the dossier ending in September. I am well informed of the activities of the civil servants union at this time; it is also part and parcel of the struggle going on in Kenya, which was reviewed, after the death of Jomo Kenyatta, in February 1979.

the statement, given in a wedding ceremony which the President also showed that the action was not simply and easily decided by the state but has to do with a struggle between progressive and reactionary sections within these Unions. The general solidarity in the University of Nairobi and the support of Professor Nguhi, along with other issues, led to closures, demonstrations, strikes etc in the university. It is also a difficult struggle against a broad section of the establishment, which is part of the structure of the State. The struggle against the academic establishment was reflected in the Imperialist education in the university, pointed out by a prominent lecturer which was published in 1970.

We are making this note to keep some of our comrades adequately following the issue to at least get an impression that our readers shall consult the above publication of the matter, and hence enhancing the solidarity by joining oneself in it. Meanwhile, we should like to see the difficult struggle for cultural liberation.

10-10-78

NOTE TO BROTHERS AND SISTERS

Earlier this year, we received a dossier showing in chronological order the events of the activity in the University of Nairobi Staff Association on the authorities to reinstate Professor Ngugi as a member of the Department of Literature.

The question of Prof. Ngugi is not new to the University of Nairobi. When the authorities abducted him in account of a patriotic play, Ngugi's story and the struggles providing its background, he himself explains in his article following this note - separated by the Department of Literature and Kiswahili along with the general academic community not for a broad-based discussion of the 11<sup>th</sup> and 12<sup>th</sup> of the Kenyan people. This discussion was summarized in papers by the students and produced in Urdah Journal of the Council of the staff of this university in 1978. A petition was signed in solid-

Just before we went to press, Kenyan President Daniel arap Moi banned Staff Union along with the civil servants union, for "too much license to politics" and failing to represent their members adequately in a trade union sense. This action is of course not unconnected with the efforts of the teachers, whose many actions to that effect are exhaustively documented in the dossier ending in September 1979. We are not well informed of the activities of the civil servants union, but as it may, it is also part and parcel of the struggles going on in Kenya today, which we reviewed, after the death of Jomo Kenyatta, in Kaji Kaji No. 36, February 1979.

The statement, given in a wedding ceremony which the President attended, also showed that the action was not simply and entirely an official decision of the state but has to do with struggles between progressive and reactionary sections within those unions. While there has been general solidarity in the University of Nairobi concerning the reinstatement of Professor Ngugi, along with other issues which constantly lead to closures, demonstrations, strikes etc in the university, there is also a difficult struggle against a broad section of the academic establishment, which is part of the structure of the State itself. A struggle against the academic establishment was reflected in a paper last year on imperialist education in the university, pointedly criticizing a number of prominent lecturers which was published in Kaji Kaji No. 32, May 1978.

We are making this note to keep some of our comrades who have not been adequately following the issue to at least get an idea of it, while we expect that our readers shall consult the above publications for a full view of the matter, and hence enhancing the solidarity by understanding and involving oneself in it. Meanwhile, we should listen to Ngugi's long's on the difficult struggle for cultural liberation.

But it is in the theatre that the struggle in culture is most manifest. Kenyan drama Drama Group which produced Ngugi and Micere Githathi and Imbuga's Betrayal in the City; Free Travelling Theatre which tours the country of plays in English and Kiswahili; the current production of Imbuga's The Successes Collages dram festivals, have all tried to dominance in the theatre.

The trend is virtually the same in music and plastic arts. It is either foreign music, or Kenyan music but produced by foreign-owned firms; it is either foreign sculpture and painting, or Kenyan sculpture and painting but exhibited in foreign-owned art galleries.

It is in the theatre where this domination by foreign cultural interests is nakedly clear. Nairobi has recently seen a mushrooming of foreign cultural institutions like the French Cultural Centre; the German Goethe Institute; and of course the American Information Services,

A most ludicrous colonial affair is the Donavan Maule Theatre in Nairobi. With productions like the Killing of Sister George and Michael Crichton's Clouds, they see themselves as offering a touch of civilization (West End and Broadway combined) in theatrically darkest Africa. One of their favourite advertisements in tourist brochures carries the slogan; "A Professional Theatre in the Heart of Africa!" They just about avoid advertising "A Professional Theatre in the Heart of Darkness."

What annoys most patriotic Kenyans about the theatre scene in their own country is not the foreign presences but the fact that the Government-owned premises, the Kenya Cultural Centre and the Kenya National Theatre, should also be controlled by foreigners offering foreign theatre to Kenyans. A foreign cultural mission - the British Council - occupied virtually all the offices at the Kenya Cultural Centre. The governing council of the same centre is chaired by a British national and the British Council, in addition, is represented in the Council.

The National Theatre, which is run by the governing council, is completely dominated by foreign-based theatre groups like the City Players and Theatre Ltd. What these groups offer has nothing to do with Kenyan life except when they may offer racist shows like the King and I or Robinson Crusoe.

Most of the groups at the Kenya National Theatre often import directors, costumes, orchestral pieces, and actors from England and Canada giving the impression that there are no Kenyan directors, no Kenyan clothes, no Kenyan actors, and no Kenyan musical instruments.

The Kenyan reply to all this over the years has met with varying degrees of success and failure. In the cinema there has not been any success. A Kenyan film-maker, Hilary Ng'weno's Weekly Review and the Nairobi Times. The Weekly Review has been published for four years; its content and outlook however is entirely another matter.

In the schools, Kenyan teachers of literature met in 1973 and for the next three years or so produced far-reaching detailed recommendations on the teaching of literature in Kenyan schools, basically asking the Government to replace the present syllabus, based on foreign culture, with one which would be Kenya and African-based. The recommendation went through all the necessary administrative organs often meeting with enthusiastic approval until the time of implementation. They have now been shelved. Jane Austen is deemed more relevant to Kenya than Chinua Achebe.

Kenyan musicians like Kamau are struggling against great odds but they have survived - and continue to enliven the musical scene in Kenyan national languages, thus reaching a mass audience.

But it is in the theatre that the struggle for a national expression in culture is most manifest. Kenyan drama groups like The Festac 77 Drama Group which produced Ngugi and Micere Mugo's The Trial of Dedan Kimathi and Imbuga's Betrayal in the City; the University of Nairobi Free Travelling Theatre which tours the country every year with a repertoire of plays in English and Kiswahili; the University Players with their current production of Imbuga's The Successor; and the Kenyan Schools and Colleges drama festivals, have all tried to challenge this foreign dominance in the theatre.

In the process, they have unearthed a ~~number~~ of Kenyan talents in acting and directing that puts to shame the production of the foreigners.

And yet often these talented Kenyans have no venue for their theatrical outlet. They have to go cap in hand in the foreign cultural institutes like the French Cultural Centre to beg for a stage because there is no room for them at their own national premises. Very occasionally they may get a night or two at the Kenya National Theatre - but only when the visiting European groups are resting.

## II THE CHOICE FOR KENYA

It seems to me that the choice in Kenya today is between the foreign theatre in foreign languages, and the national patriotic efforts like those of the peasants and workers of Kamiriitho Community Education and Cultural Centre in Kenya's own national languages.

The two positions are irreconcilable because they represent two opposed interests: ant-Kenyan foreign; and pro-Kenyan, patriotic and national. The first choice can only lead Kenya to cultural sterility and death; the second would lead Kenya to cultural regeneration and strength.

In making their choice the Kenyan people may want to look back to history and realise that no civilisation on earth has ever thrived on blind imitation and copying; that foreigners no matter how well-intentioned, no matter how clever and gifted, can never develop our culture and our languages for us.

It is only patriotic Kenyans who can develop Kenyan culture and languages. And only that culture which is a product of a people's history and which in turn correctly reflects that history can push Kenya to the forefront in the comity of nations and in the building of a modern human civilization free from the social cannibalism which has reduced over threequarters of mankind to beggary, poverty, and death, not because they don't work, but because their wealth goes to feed; clothe and shelter a few idle classes in America, Europe and Japan.

In the present cultural struggle between foreign and national interests, most Kenyans would take the view that a modern Kenyan national culture should reflect in the strength and the confidence of a people who have completely rejected the position of always being the ragged-trouser philanthropist to money-mongers in London and New York and in the other Western seats of horrors living on profit snatched from the peasants and workers of the world.

## III. FOR THE FIRST TIME, THE PEOPLE COULD SEE THEMSELVES

One of the weaknesses of national efforts in the theatre is that the writers, directors, and actors often operate within the same traditions as the foreign theatre they are setting out to challenge. First their theatre has mostly been in a foreign language; i.e. English, and therefore in spite of any radical innovations in content and method, their target audience can only be the foreign, English-speaking audience or the Kenyan English-speaking bourgeoisie.

These groups have not tried to exploit the resources of the Kenyan national languages (that is, the languages of the several nationalities that make up Kenya) and the cultural traditions carried by these languages. Hence these groups in spite of their achievements have not yet appealed to a truly national audience.

Most Kenyan writers for the theatre have not tried to change the content of their drama to take a pro-Kenyan patriotic stand. Their plays have espoused the same class values of their Western counterparts. A good example is Kenneth Watene's *Dedan Kimathi* which depicts Kimathi, the brilliant Mau Mau guerrilla leader against the British colonial

presence, in the same terrorist terms as he was last depicted by I. A. Oduor in *The Hunt for Dedan Kimathi*. Because they have operated within the same structure of values, assumptions, outlook, they are as much a part of the theatre "establishment" these groups have not been able to make a very effective challenge to foreign cultural domination in Kenya.

This is the historical importance of the emergence of village-based theatre groups like that of Kamiriithu Community Education and Culture Centre in Limuru. This group in 1977 produced *Ngũgĩ's Ngũgĩ* (by Ngũgĩ wa Thiong'o and Ngugi wa Mirii), the first major modern play in one of Kenya's languages. The actors were all peasants and workers from Kamiriithu village; they designed, built an open-air stage in the center of the village, and they collaborated in the evolution of the script as well as in directing.

When the show opened to a paying audience, the group performed to thousands of peasants and workers who often would hire buses or travel on foot in order to come and see the play. For the first time, the rural people could see themselves and their lives and their history portrayed in a positive manner. For the first time in their post-Independence history a section of the peasantry had broken out of the cruel choice that was thitherto their lot: the bar or the church.

The removal of the licence to perform the play and the subsequent detention of one of the authors in December 1977 was a severe blow to the efforts of Kenyans to successfully challenge the foreign theatre and cultural establishment in Kenya. In spite of this setback, Kamiriithu example provided the first meaningful challenge to foreign cultural domination in Kenya by changing the whole terms of the struggle - in location, audience, language, values and even in production - by introducing communal participation.