

RURAL ROADS AND PEOPLE

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We start with the proposition: ROADS IS GOOD.

We have to start this way or we get into serious trouble. Why else would we have AEPRP, ATAP, IRP, CRRP, etc? Why? Because.... ROADS IS GOOD. The proposition becomes almost dogma, an axiom.

Immediately a phrase comes to mind by one of the all-time great transportation thinkers, Percy Bysshe Shelley. Hail to thee blithe spirit! (A quote from "Ozymandius" would also be appropriate ".... nothing remains round that colossal wreck ..." meaning, they didn't take maintenance seriously.)

In the Rural Roads Baseline Survey, we do not question the efficacy of roads. Rather we want some hard data. Two purposes: first to measure progress, and second to use for analysis. So trying to earn my keep, I've extracted some data from the draft survey for the second purpose. Having frittered away two paragraphs, lets get down and boogie.

TABLES 1, 2 and 3 - TRAFFIC COUNTS

Two things need to be kept in mind: the count was made at a typical point on the road - neither too near the main junction nor too near the termination - over seven days during the rainy season - not a peak period in the year.

The first thing you notice is that pedestrian traffic far exceeds vehicle traffic. Second you note that more males use the road than females, particularly as passengers, but even on foot.

Why? The survey doesn't say. In fact, the baseline wasn't meant to tell us why. My job. At this point, I can only ask questions:

Do more people walk than ride because:

- a) they don't have the money for fares?
- b) there aren't enough vehicles?
- c) they aren't travelling very far?

The baseline doesn't have the kind of data to draw a conclusion. It doesn't tell us which income groups travel by vehicle - probably difficult, if not impossible, to determine anyway. It doesn't tell us where all these people were going.

Do more men travel by vehicle because

- a) men control household finances?
- b) men travel longer distances?
- c) women are too busy to travel?

Just as important: will patterns change when these roads are improved?

- Will people have more income to spend on fares?
- Will fares be less costly?
- Will more passenger vehicles use the roads?
- Will people travel further?
- If so, what will that mean for the village economy.
- Will women have their own sources of income?
- Will women have more time to travel?

This latter group of questions borders on prophesy, but we can, I believe, get answers to the multiple choice questions and begin filling in the picture sketched by the baseline survey.

#### TABLE 4 - ROAD USE

Certain problems arose with the Road Use Table as noted below it. The following are some possible conclusions we might draw based on the percentages (with more detail we could be a little bit more certain):

- Men make more purchases than women except in Hai.
- The roads are used more for buying than selling.
- Women use health services more than men.
- Roads are not used much for going to school except in Hai.
- Improved roads would not save time for women collecting firewood except in Hai ..... maybe.
- Few people have off-farm income except men in Hai.

There's no direct link between Tables 1-3 and Table 4. We don't really know why those passengers and pedestrians were using the roads. We might assume they were pursuing one or several of the purposes listed in Table 4, but we can't be certain.

#### TABLES 5, 6 and 7 - VEHICLES

We have problems with these tables mixing mangoes and papayas. TABLE 5 indicates types and quantities of vehicles registered in the four areas - excludes bicycles, motorcycles, and carts (which aren't registered).

TABLE 6 gives traffic counts at a particular spot on the various roads over seven days.

TABLE 7 tells us percentages of Households using various types of vehicles to haul crops. (The survey also gives data for hauling livestock products, building materials, etc.; crops was an arbitrary selection).

Some observations on these tables:

TABLE 5

- Very few saloon cars except in Hai.
- Almost no buses; people must travel by other means.
- Few small trucks but a surprising number of big trucks.
- To emphasize, no count of the number of carts, bicycles, motorcycles.

TABLE 6

It might be useful to compare with Tables 5 and 1. Unfortunately certain key details are missing. We don't know, for example, whether a vehicle was counted once or everytime it crossed a point. The one minibus in Hai may have crossed the point where traffic was counted ten times or it may have been 10 different minibuses of which one may, or may not, have been registered in Hai. The 11 pickups in Mbinga may have crossed the point 126 times or maybe it was 126 different pickups. Therefore we can't determine whether vehicles using the roads come from within or outside the areas.

Comparing Table 6 with Table 1 is even more difficult, because "passenger" is not defined. If someone crosses the point on a bicycle, is he/she a passenger? Obviously not because 145 vehicles crossed the point in Mbozi (or an unspecified number 145 times) and there were only 64 passengers - 82 vehicles in Shinyanga and only 34 passengers. Is a passenger someone in/on the vehicle other than the operator? Such as someone riding on the back of a bicycle or someone riding in a pickup? Maybe, but maybe not. Even in Mbinga and Hai where passengers outnumbered vehicles, it wasn't by much: 261 passengers to 243 vehicles in Mbinga; 460 passengers to 413 vehicles in Hai. Maybe a passenger is someone who pays to ride

in/on a vehicle. But if that is the case, the passenger count doesn't tell us accurately the number of people using the road in vehicles, since the numbers don't include the operators or persons riding for free. And to reiterate, counts were done in the rainy season when there's less vehicle movement on rural roads.

TABLE 7 - PERCENTAGE OF HOUSEHOLDS USING VEHICLES TO HAUL CROPS

Several points must be noted for this table to make any sense. Since almost all household engage in agriculture, all must haul crops. Second, people can haul crops by more than one means. Therefore, the 14% who haul crops in Mbinga by vehicles (Cars/Vans/4WD/Trucks/Buses) may also carry produce on their heads. However even if the 14% using vehicles (of any sort) and the 27% carrying headload were completely separate, that still only accounts for 41% of the households. This table may indicate the percentage of households which haul crops by roads. And if that is the case, the headload percentage is only useful as a comparison because no one rehabilitates roads for headload traffic. In fact it makes little sense to improve roads for bicycles, carts or even tractor/trailers. And we are left with 5-16% hauling crops in vehicles by road (maybe, since I'm only guessing what Table 7 numbers indicate). As with comments regarding Tables 1-3, the question is: Will patterns change when roads are improved?

We can conclude from the data that many people in the rural areas have yet to take advantage of that nifty device invented a few years back called the wheel. The great majority walk from place to place and haul loads on their heads. ROADS IS GOOD. So say we all. But roads alone will not carry rural Tanzania into the 21st century.

Part I of this paper started with the proposition:

ROADS IS GOOD. Put in another way we might call this "supply-side development." The Rural Roads Baseline Survey indicated that roads, even in their current deteriorated condition, are underutilized.

Most people in rural areas walk from place to place and haul things on their heads/backs. Given the present state of affairs, is there a demand for improved roads?

Before getting into this question, it might be useful to backtrack a bit to examine how we came up with the proposition that ROADS IS GOOD. Way back when, say 1986, the wise men stated that poor roads were a major, if not the major, constraint to development in the country. Donors could buy that. Certainly A.I.D. did buy it for about \$22 million. We looked at national statistics. We read in the newspaper almost daily of crops stranded in the villages. Some of us even made the ultimate sacrifice - a field trip - and observed first-hand that yes indeed, the roads were in a very sorry state. Given all that evidence, we could not fail to conclude that beyond a shadow of doubt: ROADS IS GOOD.

Unfortunately or fortunately (depending on your point of view), no one asked the villagers whether they thought roads is good. All that data, all those news accounts, all those observations were macro-level based. From the macro-level, there was/is a demand for improved roads. So now we come back to our question: is there a demand for improved roads ..... at the village level?

If we look at various tables in the baseline survey, we may begin to answer that question.

Lets take Shinyanga where roads are currently being rehabilitated. The survey covered 80 households in 12 villages along a 48 kilometer stretch. I will once again arbitrarily look at data on crops since it is a major economic activity. Below is a table constructed from several different tables in the survey report.

<u>CROP</u>	<u>% HH Growing</u>	<u>% HH Crop Mktg.</u>	<u>1988/89 Gr.Prod(MT)</u>	<u>Qty Mktd</u>	<u>Gr. Value Prod(Tsh.000)</u>	<u>Gr. Value Mktd.</u>
Cotton	38	73	1300.4	949.3	33,800	24,674
Sorghum	47	3	3819.0	114.6	42,009	1,260
Maize	74	3	2153.2	64.6	34,448	1,033
B. Millet	31	20	269.2	53.8	2,430	486
Paddy	46	5	465.0	23.3	10,230	511.5
Groundnuts	46	9	553.3	49.8	63,595	5,724
S. Potatoes	73	5	5605.0	280.3	28,025	1,401
					<u>220,179</u>	<u>35,089.5</u>

Assuming 80 households is a representative sample - which we must or why bother with the survey - the data immediately destroys the long-held belief that cotton is king in Shinyanga - only 38% of the households grow it, the next-to-last crop. The next thing to grab your attention (I hope) is the small percentage of households that market crops other than cotton. Now, here I have to admit a certain leap of faith. The survey gives us no gross production, percent of households which grow a crop, and percent of household which market a crop. Column #4 - Quantity Marketed - is a hypothetical figure as is Gross Value Marketed. In fact, the survey report doesn't tell us the percent of crops marketed, only the percent of households which market crops - two entirely different numbers. And the percentage of households represent only those which officially market crops,

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which may or may not be anywhere near the total. The survey does state on page 140 that the average household earns TShs. 60,709 from crops - it doesn't indicate whether this is gross or net income. Unfortunately the survey also fails to provide either population figures or household numbers for the 12 villages surveyed. So with the data available, my calculations are as good as any.

But for our purposes when looking at demand, simply looking at percentage of households which market any crops should suffice to make the point. At the macro-level, cotton is one of the top foreign exchange earners for Tanzania. Cotton stranded in villages is national income lost. However at the village level, only 38% of the farmers give a hoot whether cotton is stranded. And those who sell food crops may (since we don't have the data) do so in small amounts - a debe or bag or two at a time - at local markets easily transported by bicycle, oxcart or on the head. So for the great majority of villagers, is there much demand for improved roads? At the micro-level we might have to modify our original proposition: ROADS IS NICE, NOT ESSENTIAL. Then we qualify that with two phrases: "from information contained in the baseline survey report" and "at the present time."

(TO BE CONTINUED)

## RURAL ROADS AND PEOPLE III

In Part I of this paper, based on selected data from the Rural Roads Baseline Survey, we found that most people walk from place to place and haul goods on their heads/back. In Part II, using data from Shinyanga, we learned that only a small percentage of households market agricultural produce other than cotton and livestock, and quantities involved are generally small. Since writing Parts I and II, the survey has been rewritten and new data reported. Below are tables constructed from information contained in the recent survey draft.

### ANNUAL HOUSEHOLD INCOME (TSHS.)

	<u>MBINGA</u>	<u>MBOZI</u>	<u>SHY</u>	<u>HAI</u>
Average Per Capita	18,164	12,381	5,240	13,308
Average Size of HH	5.1	5.5	5.9	5.2
Average HH Income	92,636	68,095	30,916	69,202

### SOURCES OF INCOME

<u>SOURCE</u>	<u>MBINGA</u>		<u>MBOZI</u>		<u>SHY</u>		<u>HAI</u>	
	<u>%</u>	<u>Tshs.</u>	<u>%</u>	<u>Tshs.</u>	<u>%</u>	<u>Tshs.</u>	<u>%</u>	<u>Tshs.</u>
Crop Production	87.0	80,593	94.0	64,009	49.0	15,149	83.0	57,438
Livestock & Products	4.0	3,705	3.0	2,043	30.0	9,275	4.0	2,768
Wage Income	0.7	648	0.2	136	4.0	1,237	7.0	4,844
Trading	5.0	4,632	1.0	640	16.0	4,947	1.0	692
Handicrafts	0.3	278	0.0	-0-	1.0	309	0.1	69
Brewing	3.0	2,779	1.8	1,226	0.0	-0-	4.9	3,391

The most obvious conclusion from these numbers is that most income is derived from agriculture. Very little income is generated from wage employment or petty trading. A second, less obvious, conclusion is these rural incomes are well below per capita GDP (\$280 or about Tshs. 56,000).

We will now try to compose a picture of the rural areas. In order to do so, we must generalize and this is very dangerous. There is no "typical" village or "typical" village household. The village is not a homogeneous unit. There are relatively rich families, there are conflicts of interest, there are diverse sources of income. According to the preceding table, 30% of the average household income in Shiryanga is derived from the sale of livestock and livestock products (meat, milk, eggs and skins). Yet only 49% of the households surveyed owned even one cow, 34% had even one goat, 31% had a sheep, and only 51% had a single chicken. Still, we need to have some idea of village life to determine the potential impact of improved rural roads on people.

Our village household has six members: a husband and wife and four children, three of whom are under 15 years old. They cultivate three separate plots, none of which is more than a hectare, for a total of 2.8 hectares. The largest is used to grow a cash crop (coffee or cotton) which is the main source of household income. The other two plots are cultivated in food crops for domestic consumption. If these fields produce a surplus, it will be sold and contribute a small proportion of the household income. The wife does most of the farm work spending one to two hours a day walking to and from the plot. She also spends about three hours a day hauling water and collecting firewood. She uses another two to three hours a day cooking, taking care of the children and doing various other chores around the house. At the end of the day she will log 14 to 16 hours work and will have walked eight to ten kilometers. The husband will take their 5 goats out to graze spending an hour or so walking them and the rest of the time sitting under a tree, maybe talking with some other men who are grazing their stock in the same place. At the end of the day, he will have put in maybe two hours work and walked around five to six kilometers. The children walk to and from school located three kilometers from home. One day each week, the wife takes a debe of maize to be ground into flour at the mill located 5 kilometers from home. She gets the 40 shillings from her husband who controls all household finances although she is the primary producer. One day each month she takes their youngest child to the MCH clinic located near the school. The dispensary has only aspirin tablets and chloroquin (anyone with a temperature is assumed to have malaria). Anything more serious is referred to the district hospital located thirty kilometers from the village. Normally a sick person is taken to the road where they wait for a vehicle to pass - less than 10 will pass by on any given day. Social life for the men centers

around the village pombe club which does most of its business between 3 and 6PM. Women usually go in groups to collect water and firewood. The big event of the week is church on Sunday and drinking at the pombe club afterward.

We could go on describing our village household but one point will stand out regardless of the added detail - our village household is almost totally dependent on nature. Nature - good weather - provides the food and income our family must survive on. Nature provides housing materials, cooking fuel and, most important for our purpose here, transport. Transport is limited by the distance that can be walked and the amount that a human can carry. Forget a six-month supply of firewood, a 500 liter water storage tank refilled weekly. Firewood is collected by the bundle, water is collected by the 20 liter debe or bucket.

This has many ramifications. For example, mama tries to conserve firewood and therefore cooks only once or twice a day. She also doesn't have time to cook more than this. Even if the household has plenty of food to eat, the children may be undernourished. (Studies have shown that undernourishment in small children has more to do with frequency of feeding than the amount of food consumed at a meal.) Almost all food is boiled - cooking oil is expensive - using water that had to be hauled maybe five or more kilometers on the head. That same water is used to clean the cooking utensils. Anyone using more than two or three liters to bathe is being wasteful, unless there's a stream nearby.

We could argue that development is a more efficient (and effective) use of time and energy. Our village household does not use time and energy efficiently because it cannot. Family members use hand hoes to cultivate, they walk everywhere, they haul almost everything on their heads and backs. It takes the better part of an hour just to boil tea. To read these words doesn't even begin to get a picture of rural life. Spend a week, better yet two, in a village seeing how people go about their lives and the word "development" will take on an entirely new meaning.

ROADS IS GOOD. Roads bring development. How? We will examine "how" in Part Four.

(TO BE CONTINUED)

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## RURAL ROADS AND PEOPLE IV

In Part 3 of this report we looked at a "typical" village household in order to gain some insight into the people-level impact of rural road rehabilitation. We saw that our totally imaginary "typical" village household does not use time and energy efficiently. We even had the temerity to consider development the more efficient and effective use of time and energy.

Now we ought to get down and do some serious number-crunching. We really like to crunch numbers. Number crunching implies hard data. You can only crunch something that is hard. It's one of the reasons we like road activities. We get lots of hard data: kilometers rehabilitated, number of contracts let, contracts completed, funds committed, funds disbursed, goal, purpose, outputs, inputs. This data you can really crunch.

Unfortunately most numbers coming out of rural Tanzania are porridge. It's not because people don't know their jobs. It's not because there are practical, down-to-earth engineers working on the roads and fuzzy-headed sociologists in the villages. Rather it has to do with perceptions, motives and definitions.

Let's take some examples from the Baseline Survey of what appears on the surface to be hard data but in reality is statistical porridge.

We'll start with something so simple and so basic to socio-economic statistics that it's practically impossible to miscalculate but, if miscalculated, will cause immense distortions - average number of persons per household. Anyone with basic arithmetic can figure this: total population divided by total number of households. On page 46 of the survey report we are given average household size in the four districts surveyed from the national population census in 1988. These numbers are calculated by experts

in the Bureau of Statistics. They know what they're doing and are using the most up-to-date data available. We can rest assured that average household size is:

Mbinga	5.1
Mbozi	5.5
Shinyanga	5.9
Hai	5.2

We ought to be able to take these numbers to the bank. However on page 161 of the baseline survey we discover that the total number of persons living in the 80 households surveyed in each of the four districts were as follows:

Mbinga	$498 \div 80 = 6.2$
Mbozi	$516 \div 80 = 6.5$
Shinyanga	$481 \div 80 = 6.0$
Hai	$482 \div 80 = 6.0$

Now how can that be? Is the Bureau of Statistics wrong? Not very likely. Did Agriconsult miscount the number of persons in these households? Also not likely. Could it be that through some fluke, all four survey sites don't follow district norms; in other words, we don't have a representative sample? Perish the thought. I would submit a fourth possible explanation. The Bureau of Statistics and Agriconsult were using two different criteria for what constitutes a household. Agriconsult states that a household is the number of people who sleep and eat under one roof. We don't know how the Bureau defines household, but there are several different definitions floating around Tanzania. No one is more "correct" than anyone else; it does mean there seems to be a lack of agreement on what constitutes a household and consequently some variation on any data using average household size in the calculation.

Lets look now at another very basic statistic-average area under cultivation per household. On page 126 of the survey report, we find the average size farm in the survey areas is 2.8 hectares. I not only accepted it, but used this figure in Part 3 of this report. Then I happened to convert the 2.8 hectares into acres (being old-fashioned I still have difficulty with metrics) and discovered this became 6.72 acres. No way! Not as an average, not in Tanzania! So checking some other statistics by Marketing Development Bureau I discovered the following:

Average Household Area Under Cultivation

<u>Site</u>	<u>Agriconsult</u>	<u>MDB</u>
Mbozi	3.2	1.6
Mbeya	2.7	1.4
Shinyanga	3.7	1.9
Hai	1.6	0.6
Average	2.8 (6.7 acres)	1.4 (3.4 acres)

Something is very definitely wrong here. Is it Agriconsult? Maybe. Is it MDB? Maybe. Is the survey a non-representative sample? Lets hope not. Again I would submit a fourth possible explanation based on experience. People confuse hectares and acres. The two words sound similar in English and almost the same in Swahili. Most farmers here still think in acres. Almost all area data these days is stated in hectares. It's simple enough to convert acres into hectares, but first you must know which unit you're starting with. If you ask a farmer: "How many hectares do you cultivate," and he/she replies, "three," you write down "three" (hectares), but the farmer may have meant three acres, only 1.25 hectares. But whatever, we can't be sure of these numbers and certainly shouldn't be foolish enough to make definitive statements based on them.

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One final example, just in case you still want to quote some numbers. This time we'll look at another very basic statistic - average yields. On page 68 of the survey, Table 3.23 gives average yield per hectare for various crops grown in Shinyanga based on data supplied by the District Agricultural Office. On page 138, Table 4.24 has average yields based on data supplied by the farmers surveyed.

Here's what we get:

Average Yield (Kg/Ha) in Shinyanga

<u>Crops</u>	<u>GOT</u>	<u>Survey</u>
Cotton	700	314
Sorghum	1,500	300
Maize	1,000	400
Paddy	2,500	800
Groundnuts	900	250
Millet	800	700
Sweet Potatoes	5,000	700

Are we talking about the same place? Are we even in the same country? Does the GOT know how to calculate average yield? Does Agriconsult? Yes and yes. Did someone confuse hectares and acres again? Maybe. Once again I would submit another possible explanation for the discrepancies. The GOT yields may be based, not on actual production, but rather on targets which are almost always overly optimistic. It also may be that farmers consciously gave less than actual production yields because they thought the surveyors were after data which could be used to increase their taxes. The actual yields may lie somewhere in between, exactly where we don't know.

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All this points to the inescapable conclusion that we must be very cautious using any sort of data to describe rural Tanzania. We must look at rural statistics with great skepticism. This does not mean that all data is inaccurate, but it does mean that almost all numbers are suspect. We must use several sources if available. We must balance what the data tells us with what people tell us and what we have learned from our own experience. Those who believe they are standing on hard data will likely sink in the porridge.

No one can, realistically, make absolute definitive statements about rural Tanzania. Please disregard the following statement in the Baseline Survey: Average per capita income in Mbinga is Tshs. 18,164 per year. Rather more realistic would be: The estimated average income in Mbinga is around Tshs. 18,000 per year. The first statement implies hard data - 100% accurate information used to come up with 18,164, not 18,165 or even 18,160. The second statement contains two qualifiers so that we know this is not hard data but an approximate figure based on estimates rather than 100% accurate numbers. No doubt it's a real drag prefacing every statement with qualifiers. But better qualifiers than illusions of accuracy and distortions of reality. Better the certainty of uncertainty than never-never land.

So the first lesson in rural development is: forget the crunch of hard data, learn how to eat porridge.

(TO BE CONTINUED)

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## RURAL ROADS AND PEOPLE V

There must be some way outta here  
Said the Joker to the Thief  
There's just too much confusion  
We can't get no relief.

- Bob Dylan

To get outta here and get some relief, we will begin by briefly reviewing the discussion thus far. We started with the proposition: ROADS IS GOOD. We examined various data from the draft Rural Roads Baseline Survey and concluded that improved roads alone will not carry Tanzania into the 21st Century. We then looked at roads from the village point of view and saw that currently roads are underutilized - most people walk and haul goods on their heads or backs. We attempted to come up with a typical village household, with the understanding that no such household exists. We concluded that our imaginary household does not use its time and energy efficiently. We then looked at some very fundamental data in the Baseline Survey and saw that it is in no way reliable and that accurate data is difficult, if not almost impossible, to come by. We must use numerous sources and our own experience to gain an impression of rural Tanzania. The only certainty is uncertainty.

Lets start with some dangerous statements, in some cases re-statements. It is fairly obvious that the criteria used in identifying core rural roads had more to do with impact on the national economy rather than on the local economy. While these are not mutually exclusive, we cannot automatically assume they are mutually inclusive.

Let us state further that increased rural income does not automatically bring about increased rural well-being, especially if numbers used are aggregated. Access and distribution have a lot to do with well-being. Aggregated income increases may, in reality, mean the rich are getting richer. (One such misleading statistic

showed that during the Shinyanga drought livestock sales more than doubled; however the livestock population remained constant. Rich people were buying poor people's animals.)

We cannot assume that increased production will increase income or rural well-being. We cannot assume that regions which produce more food have better nourished people. A recent survey showed that Iringa had a daily per capita food balance of 4,060 KCal with a malnutrition prevalence of 40.3% while Kilimanjaro with a balance of only 2,415 KCal had malnutrition prevalence of 29%. (Explain that one.)

The only assumption you can make in rural Tanzania is that all assumptions are flawed; all data is suspect; all factors have not been considered; all conventional wisdom is just as likely wrong as it is right. And that includes what follows.

Having stated the above, we will set out some issues, none of which are new, and none of which will be accompanied by proposed solutions.

If the ultimate goal of the road rehabilitation program is improved rural well-being, then it naturally follows (dangerous statements coming up) that the number one issue is the role of women. Rural well-being is almost entirely dependent on women. Women are the main producers; women are the main income-earners (although they seldom control that income); women look after over 50% of the country's population - children under 15 years old. Any activity purportedly enhancing rural well-being which fails to take into consideration gender issues is not worth discussing. So lets discuss gender.

In Part 3, we saw that women put in a full day working in the fields, hauling water and firewood, cooking and looking after the children. One obvious way to cut down on women's workload is to bring the water and trees closer to the women. A lot easier said than done. Tanzania has had numerous water and tree planting/reforestation projects but they haven't made much of a dent. Furthermore, the only argument put forth to justify such projects as economic development runs: if women spent less time hauling water and firewood, they would have more time to engage in productive/income-generating activities. Great idea; unfortunately women don't control production or income. All we've done is decreased women's workload so we can increase it and women generally, don't benefit one iota either way.

Another approach would entail somehow entiticing men to a) put in more than an hour or two of productive labor each day, and b) exercise more concern for household welfare. Another great idea but it hasn't happened yet. There is tremendous irony here. Men are quite capable of working long, hard hours.....for pay. Male domestic workers cook, wash dishes, do laundry, even haul water and firewood if necessary.....all for pay. However what men will do for pay, they will certainly not do in their own households. The greatest male chef in Tanzania could not even think of boiling water for tea in his home. It is therefore highly doubtful that men will of their own chosing put more time into productive labor or be more concerned about household welfare.

Moving sideways for a paragraph, we might look at Ujamaa collective farming. In the 1970s every village was supposed to have an Ujamaa farm. All villagers were also allocated household plots. The collective farms generally failed because people put most of their time and energy into their household plots.

This may be one way out for women. If women had opportunities to retain money from at least one of their productive activities - poultry, vegetables, brewing - then things might begin to change. The hypothesis here is that money brings power and possibly a bit of independence. My own guess is that men will not lightly accept such a challenge to their practically total control and absolute authority. So while it may make sense in theory, implementation could be more than a little problematic.

The above somewhat ties into the second issue. Various tables in the Baseline Survey, some of which have been previously cited in Parts 1-4, indicate that rural Tanzania still operates on a subsistence economy. Whether or not the numbers are 100% accurate, we can conclude that villagers grow one cash crop from which they get most of their income, and this income - not great - must cover their production costs and consumption needs. The rest of their time and energy goes into basic survival. Because villagers have little income, consumption is limited to a few essential commodities. One key to people-level impact of improved rural roads may be income generation in the sense of a better balance between cash and subsistence. Once again, much easier said than done.

Several approaches might be considered. The most facile runs: improve the roads, the economy will naturally follow. Possible, but not probable.

A more standard line of reasoning goes: to increase income, we should increase production. There are two ways to go about this in agriculture. The quantitative approach would entail bringing more land into production. The baseline data does not offer a very clear indication whether this is possible. On page 126 it states that land under production in Mbinga is 75%, in Mbozi 82%, in Shinyanga 58%, and in Hai 98%. However, in other places it gives different

figures for Mbozi (90%) and Shinyanga (75% with another 22% unsuitable for agriculture). Given the mountaneous terraine of Mbinga, the marginal land in Shinyanga and the intense cultivation in Hai, this approach doesn't offer much.

The second way to increase production is more intense cultivation of existing areas. Lets rule out tractors on holdings of only around three acres split up into three or more separate plots. We all know about increased production thru inputs like improved seed, fertilizer and chemicals. In theory this works. In practice there are serious problems with cost to farmers who don't have much expendable income anyhow, and inept distribution coupled with lack of extension.

There is finally a fairly valid argument that existing production has already overburdened the marketing system. We'll explore this shortly.

Another possibility to increase income might lie in diversification. The baseline data indicates roughly 80-95% of household income is derived from agriculture. Wage income varies from 7% to less than 1%. Trading - various types of buying and selling - account for 1-5% except in Shinyanga where it jumps to 16%. More on this another time.

The other side of the economic coin concerns marketing. This has to be our primary purpose in improving rural roads. We use marketing here in its broadest definition: all processes from the time the producer harvest crops/milks the cow/slaughters the goat/collects the eggs/until the product winds up in the hands of the consumer. This, by definition, includes income generation. If the consumer is the producer, no marketing has taken place. Marketing might encompass barter although no cash is involved. Marketing elements would include storage, processing, packaging and of course transportation. Lets leave transportation aside in that others much wiser heads can deal with it.

There are good arguments for both storage and processing. Better storage means less post-harvest loss, higher quality of product, more marketing choices (store and sell later when the market value increases). Processing adds value: rice is worth more than paddy, oil is worth more than sunflower or cotton seed.

Put in crude and oversimplified terms, it is possible to increase income by improved marketing without added production. It would be sheer folly to increase production without improved marketing. Ideally we're after both increased production and improved marketing, but marketing must come first.

So far we have left out a crucial element. The old saying goes: it takes money to make money. The stupid truth is that so many rural Tanzanians are poor because they don't have much money. We experts often forget this. Input packages, diversification and improved marketing require money. Many believe one of the biggest problems in rural Tanzania is credit. The Baseline Survey doesn't get into credit and we won't attempt to do so here. We will examine it in the future.

The final issue is fundamental to any serious discussion of development. We started this series with the proposition: ROAD IS GOOD. We can end it with another proposition: DEVELOPMENT IS GOOD. Reading the myriad proposals for development, you have to be impressed with all those good ideas, all those good intentions. Many fail, others bring "mixed results" (meaning not total failures) and only a few come close to achieving stated (even revised) objectives. How can these intelligent, well-intentioned, honorable people screw up so much? An over-simplified reply would be the vast gap between theory and practice, the inter-galactic distance between the never-never land of high-powered experts and the reality of the villages.

Rather than point the accusing finger at dodo birds with credentials from here to Tuesday, we can simply review some of the statements in this paper. We stated the one key to people-level impact of roads may be increased income. But we also stated that increase income does not automatically lead to rural well-being. Contradiction. Reality. We stated one way to increase income is to increase production. We also saw that increased production can, in some cases, erode rural well-being. Contradiction. Reality.

Lets go further. What increases well-being in Village A may not increase well-being in Village B just down the road. Lets go even further. What increases well-being for some people in Village A may not increase well-being for other people in Village A. Lets get really out on the edge and say, what's good for the goose is not necessarily good for the gander and vice versa. We are left with a mess and we so desired a nice neat "development package."

We have several ways to deal with the confusion. One is to limit objectives such as: Improved rural roads will increase the well-being of middle and upper income, male, cash crop farmers. Another is to forget the villages and deal with macro-level policy. A third, previously mentioned, is to improve the roads and let nature take its course. And finally we can accept the confusion and jump right into the mess with the hope (and maybe prayer) that knowing things are confusing and messy will somehow work to our advantage.

I might submit a few premises just in case we are foolhardy enough to attempt the latter. First, any development proposal in Tanzania can work if given enough time. Time is the critical factor, not money (although it's also valid to state that time is money). Second, the number one question is assessing any proposal is: WHO BENEFITS? Or maybe being cynical, who REALLY benefits? Third, strip away the glowing prose, the pseudo-technical

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gobbledy-gook and determine whether the proposed activity will work in context of the real world in rural Tanzania - "WILL IT WORK OUT THERE?" Finally, feel free to disregard all the above because what I think may not be anymore valid than what anyone else thinks.

Well Bob, I suppose we failed: there's still too much confusion and we still can't get no relief. But then again, I'm the Joker not the Thief. And I'm outta here.

THE END

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