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DISCUSSION: THE NEED FOR A SYSTEMS APPROACH TO RURAL DEVELOPMENT RESEARCH

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As we have come to expect from Professor Tweeten, his paper expertly covers a wide array of ideas, facts, and intriguing questions. He is to be commended for illuminating some of the failures of both policies and research in rural development. He believes we could and should do better. I agree. On this level there is nothing I can add except to reinforce his view that we need to get some better handles on the problems and their solutions. There are more specific matters raised which do call for some discussion.

The illusive nature of the meaning of systems analysis is obvious when we attempt to define what we mean by it. Perhaps it is not inappropriate to quote from *Alice In Wonderland*:

"When I use a word," Humpty Dumpty said in a rather scornful tone, "it means just what I choose it to mean — neither more nor less."¹

The point is that *systems* as used in this paper, an adjective, can and does mean anything we wish it to mean. On the other hand, I believe a much better word to emphasize is the verb approach. I am skeptical that *systems* is *the* approach to rural development research. Perhaps *an approach* is what we should talk about. I believe there are some lessons to be learned from marketing and production economics research. I have no formal proof, but I have the feeling that the systems advocates in those areas are less enthusiastic today than they were a few years ago.

As I understand it, Professor Tweeten's case for the systems approach in rural development research is that it would help us conceptualize better how all the

parts fit together and enable us (whoever "us" is) to do better social engineering. His reasoning goes that the systems approach would discipline our minds to consider the interactions and whole packages of programs which are, or could be, called "rural development" policy. Through the use of computer simulation models, etc., we can acquire a better understanding of the inputs and outputs as contributions to established goals. I, for one, admit "the basic limitation of the human mind in dealing with socio-economic systems," but I also have reservations about the human mind's ability to put the right things into the computer models and even to interpret what the big machine spits out. This leads me into some of the more specific points in the paper, and what I feel are its fundamental limitations.

ON MARKET IMPERFECTIONS

Tweeten moves with apparent ease between the use of the terms "efficiency" and "effectiveness." He seems to assume that a high order goal is to improve the efficiency of the total system and, by eliminating market imperfections, make it more nearly conform to the perfect market which would benefit both rural and urban residents. This is predicated on his belief that market imperfections "work to the disadvantage of micropolitan areas;" therefore, their elimination would make it all better. This is an hypothesis which deserves more study, but suffice it to say the evidence is not conclusive.

One reason people are poor is that the market is working at reasonable efficiency and rewarding those who have something in the form of resources which people are willing and able to buy; those who have nothing the market wants do not receive rewards, and

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¹ Lewis Carroll, *Alice in Wonderland*.

are poor, just as we would expect from a market economy. It is fashionable among economists to say that a more nearly perfect market would make everyone better off. I am not so sure of this, despite my economist's inclination! I suspect the market economy tends to reward the "have's," particularly those who have power.

In a more theoretical vein, Dr. Tweeten neglects the "Theory of Second Best" which tells us that if any one of the necessary equilibrium conditions is not met, then we cannot conclude that an attempt to meet any of the other conditions will move us any closer to a social optimum. Piecemeal policy and programs to improve efficiency can conceivably make matters worse, even in the efficiency context. What is the effect of trying to improve efficiency in one sector or for one group if the rest of the economy poorly resembles a perfect market?

MEASURING THE EFFECTS

Let me turn now to the problem of measuring public program effectiveness (inputs and outputs). I am sure Tweeten recognizes many of the pitfalls, but his paper makes it sound too easy. Missing in his presentation is any mention of the lagged effect of social programs. It seems to me that we are, frankly, unable to say what the outputs of many of our recent programs are. Many programs have been launched in recent years and many abandoned. I would submit that many programs have been abandoned long before we knew whether or not they contribute toward the goals set for them.

Unfortunately, humans are the most difficult commodity to deal with, and the effects of various experiences are rather dormant, slow and imprecise in revealing themselves as results. If this were not true, psychiatrists would be unemployed. Who is really to say that manpower programs have not been "effective" simply because the person does not find a job immediately or even after considerable time? Admittedly, we need some measures to directly link output to input, but when processed through the human psyche, the results are hard to quantify. Was the most important result of WPA the construction, the job skills learned, or perhaps the role it played in preserving some dignity and sanity in the depression years, thus enabling the participants to become productive members of society years later?

Another aspect of this measurement problem is the idea of returns on investment and the concept of equalizing net marginal returns between programs and implicitly between target groups. Tweeten tells us that the "success" of many manpower programs decreases as they serve a more disadvantaged

clientele. His empirical evidence is impressive, and I have no quarrel with that conclusion, *per se*. However, I am puzzled by the implication of this. The results are not surprising. I suspect our extension people could have told us this long ago. After all, why was extension work largely concentrated on the better farmers? I would suggest that it probably was because there was a higher and more visible payoff. If we followed this reasoning to its logical end, we should ignore the poor and concentrate on helping the rich because the payoff will be greater.

The same thoughts run through the argument popular a few years ago that it cost more to send a disadvantaged female through a year of Job Corps training than to send her to Vassar for a year — therefore, the Job Corps was inefficient and should be discontinued. Few people asked which was worth more to society in terms of future benefits — sending a rich girl to Vassar or training a disadvantaged girl, even if for a low-skilled job.

INFLATION AND THE POOR

I accept Tweeten's evidence that, historically, full employment has, in the aggregate, aided the poor more than its attendant inflation has hurt them. This ignores the fact that those poor who do not get one of those newly created jobs may have a hard time believing he has been aided by inflation. There are also serious questions about the validity of the argument when applied to the last 18-24 months. With a rapid rate of inflation, led by food prices and other items which claim a high proportion of the poor's income, the conclusion is hard to accept. Perhaps this is a unique time, but perhaps not. At the minimum, we need to examine the distribution effects of recent inflation to determine which groups are most adversely affected by it.

THE ENGINEERING MENTALITY

On a practical level, I am somewhat frightened by the thought of all rural development researchers rushing out to do systems analysis. To attempt to conceptualize a total system and all of its attendant parts and interrelations on whatever level is a big order. Not only must the outputs of existing programs be measured, but also the effectiveness of potential alternatives which may never have been tried in the study area. My fear is that this could be a very disillusioning process to a researcher, particularly a somewhat inexperienced one. I also fear that trying to put everything into a systems approach may force us to include only those things which can be easily measured and ignore some very important aspects which are not easy (or even possible) to quantify. A

mind disciplined to think "systems" must be careful to not exclude those things which mess up our models. It has been argued that Americans have an engineering mentality which holds that we can solve all problems through more technology and "tangible things." I hope we do not take an entirely engineering mentality view of rural development. If so, systems approach could lead us to favor existing programs over more imaginative untried ones, and easily quantified effects over difficult-to-quantify ones.

IF WE CAN GO TO THE MOON

Tweeten uses the man on the moon as a success story for systems approach. I do not disagree. Therefore, he implies systems approach would be useful in rural development because it would help us determine what subsystems and mix of programs we need. There are some differences in rural development. In the moon program, we had not only a clearly defined target, but also a somewhat single purpose target and one which never changed. Another reason has been suggested, and I would like to read you a quote from John Kunen [3], a *Washington Post* writer:

"The really fine aspect of the trip, as we all know, was that it brought all humanity together — but it's not true. Maybe for 10 minutes it did; 20 minutes tops. But in the long run, the only thing we all do together moonwise is chip in for the ticket. And the money is needed for the cities, yes. And to soar to the moon over the faces of starving people is an obscenity, yes. But Americans are reluctant to back programs which will aid some people at the expense of others. The moonshot aided no one at everyone's expense, and was thus equitable and perfectly all right."

Does this tell us anything about why we can go to the moon but not solve our poverty and low income problems?

One may well disagree with Kunen's conclusions, but I suspect there are some lessons for rural development here. Perhaps rightly, we are concerned about windfall gains of particular groups. It seems likely, however, that economists have been too quick to assume independence of marginal utility functions in their analysis. I believe it could be demonstrated that public policies to improve the plight of the rural poor could return benefits to the rest of society as well as to the target groups themselves. Let us hope that the systems approach will not narrow our view of the benefits and beneficiaries.

CONCLUSIONS

Other items merit attention, such as the "fallacy of composition" problems, the role of political and social institutions, and the difficulty of analyzing these in a systems approach. In the limits of a paper, Tweeten should not be faulted for not trying to cover everything.

A topic which is being discussed increasingly is the adequacy of our theory for dealing with community development problems. Our theories have concentrated on either very large or very small units. Sorely missing is any significant body of theory dealing with intermediate size units, such as multicounty areas. The dynamics of communities of substate areas are not well developed [1]. This is likely to frustrate our efforts regardless of whether we attempt the systems approach or less comprehensive research and policy approaches.

The need for better understanding of how the parts of a social system work and what mix of programs will most effectively achieve targets is obvious. Whether or not the systems approach will make for better research and better policy is an open question.

To paraphrase Kenneth Boulding [2], perhaps the best thing to be said for the systems approach is that it is impossible to do it without learning a good deal about rural development in the process.

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