
Notes on Traditional Knowledge, Modern Knowledge and Rural Development

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Introduction

For this purpose, I take 'traditional knowledge' to mean the body of knowledge, science and techniques used by rural people, and the term 'modern knowledge' to mean the body of knowledge, science and techniques arising essentially from the European scientific revolution of the 17th century.¹ Traditional knowledge and modern knowledge are not at either end of a continuum of usefulness or scientificness; traditional knowledge today includes many modern notions and is based in part on scientific methods, while modern knowledge is in several important respects functionally inferior to traditional knowledge. Both types of knowledge grow and change, although modern knowledge changes much faster than traditional knowledge.

There are important differences between the two types of knowledge, although they are not easy to locate unambiguously; this is probably because we still know too little about traditional knowledge to define its scope and content accurately. But in addition to the other ways of classifying knowledge it may be useful to think of a three-fold division of the uses to which knowledge is put: knowledge as a means of classification; knowledge as a means of explanation and prediction; and knowledge as a means of setting in motion rapid and cumulative change. There is abundant evidence in most rural societies that the first type of knowledge is well developed, and may be superior, in a functional sense, for example to the Linnean system of classification. There is some sign that the second category of use of knowledge may be found in a rudimentary way, but it does not seem to be well developed. The third category, fundamental to modern science since Francis Bacon and Descartes, does not appear to be found at all in the societies with which we are concerned.

Growth and change in traditional knowledge

There is no reason to suppose that a part of traditional knowledge is created or acquired in any way differently from modern knowledge. There is well-documented evidence of experimentation in traditional agriculture. Knowledge is also certainly acquired by imitation and learning from elsewhere.

However, the rural societies with which we are concerned are pre-Galilean in the sense that they do not divide up the totality of their knowledge into small manageable pieces, experiment with the pieces (in the process building up specialised expertise in particular fields), and put them together again in a system which is each time more complex and more accurate. This process, and also the hypothesis-building and testing characteristic of modern science, is a fast and reasonably reliable way of generating new knowledge. A formal education system, with books, is probably also essential to the rapid and easy acquisition of the existing stock of knowledge by individuals in the society as a base for future experimentation and further creation of knowledge; informal education systems have a limited capacity in this respect once the knowledge to be transmitted can no longer be held in the head of every adult.

The ability of traditional knowledge to grow and respond to new challenges is influenced by the contemporary political and economic situation of rural societies. Their marginal and dependent position often has, among other consequences, the effect of stifling local creativity, since development in many cases has come to be synonymous with rural people acquiring modern knowledge and replacing traditional with modern technologies. This process will be examined below.

The distribution of knowledge in rural society

Traditional knowledge is not generated or acquired equally throughout rural society, and the stock of existing knowledge is not equally distributed.

In the first place there are likely to be variations between individuals in ability, opportunity or wish to observe and to experiment, according to age,

¹ The term indigenous knowledge, in the sense presumably of the knowledge of indigenous peoples, seems inappropriate, since it raises the question of who are indigenous people and whether their indigeneness is relevant in this context. It should also be noted that the kind of traditional knowledge discussed here is not of course restricted to rural people.

sex or personal ability. Thus Twareg recognise good and bad herdsmen according to individual ability. Somali pastoral weather lore specialists are otherwise unremarkable individuals who show a particular aptitude for observing the sky and drawing conclusions.

Since all traditional knowledge contains many elements of modern knowledge acquired from the outside world, people in rural societies with special access to the outside world, for example those with some modern schooling or those who travel frequently, are likely to have many more bits of modern knowledge and to acquire it more easily. At one extreme, such people may leave the rural society and return later, for example as government officials or traders. In this case they may be an important source of technical innovation. A case of this is the Somali livestock traders who build new types of water storage tanks. By the same process, such people are often less completely masters of traditional knowledge than the people who stay at home.

Even in technically simple societies, there may be some technical specialisation, for example craft-based castes, and these people may have special expertise. Twareg smiths seem to be much readier to innovate in simple material technology than non-smiths. (A large quantity of Twareg weaponry and saddlery made by the smiths now incorporates metals and plastics scavenged from landrovers).

There is likely in almost all rural societies to be some economic stratification. Richer and more powerful people may be readier to innovate because they have the time, the risks of innovation are less for them, and they may have better access to information. On the other hand, poor people may be forced to innovate in some fields because of their poverty.

Again in technically simple societies there may be an 'intellectual class'; a part of the economic surplus is appropriated by a specific social group because of its intellectual claims and the knowledge it possesses. This is the case in many west African Islamic societies, where a class of *marabuts* is paid to the repository of some types of knowledge, especially of law and history, but also more generally of knowledge to do with man's relationship to nature and the outside world. Such groups often resist innovation, rather than encouraging it, and so contribute to technical stagnation. But this is not invariably

the case: in Senegal, the Mouride Islamic brotherhood has shown great ability in organising agricultural colonisation schemes, and increasing agricultural production, though this is not so much innovation as extension of the existing model of peasant land-use to new regions.

The interaction of traditional and modern knowledge

In many cases traditional knowledge and technology is simply supplanted by modern knowledge and lost. Although this is sometimes unimportant from a technical point of view, it may happen in cases where the traditional knowledge and technology were manifestly superior to those which replaced them, and their loss is a major reduction of scientific and technical potential, as in the case of Nabatean (4th to 7th century AD) runoff farming technology in the Negev, rediscovered by Israeli researchers.²

In many other cases traditional knowledge and technology coexist with modern knowledge and technology. But their relationship is not just one of competition between two ways of doing things. There is a conflict. Modern knowledge is an instrument of power belonging to the technician or expert who controls the knowledge and has a monopoly of it in particular rural settings. The superiority of government agents and outside experts depends on their stock of modern knowledge. Modern government structures and rural development projects emphasise the government agent's knowledge and capability, and in so doing devalue rural peoples' knowledge and capability and their responsibility for their own environment; the way most rural development is planned and carried out denies any value to traditional technology and denies any creativity to rural people. (It also discourages the technician himself from creative thinking about specific problems; experts and technicians talk about innovation, but in many respects are very conservative, and merely repeat, in a wide variety of circumstances, the same technical solutions.) But because modern knowledge and technology is what distinguishes the government expert from rural people, and is the basis for the former's ostensible superiority, it is probably an illusion to think that it is enough merely to make a good case for the rationality of traditional knowledge for it to be revalued in the eyes of government agents and other rural development actors.

² M. Evenari, L. Shanan, N. Tadmore, *The Negev; Challenge of a Desert*, Harvard University Press, Cambridge, 1971.

A possible future relationship between traditional and modern knowledge

The justification for revaluing and using traditional knowledge does not depend on an assumption that such knowledge is superior to modern knowledge. It is simply that rural people know useful things other people do not, that they are more likely successfully to work a new technology or rural development strategy they themselves have had a hand in devising, and that they have a good moral claim to participate in deciding their own future on the basis of their own experience.

Most of the discussion on this subject concerns how we can learn and use the traditional knowledge of rural people. While this is a useful step forward from the position that only modern knowledge has any validity or use, it still reserves the main action role in rural development for ourselves. It is assimilating traditional knowledge into modern knowledge in order to make the latter more efficient, rather than making a real synthesis of the two at the level of rural society. A more difficult task, necessary to real progress, is to transfer the power of action back to rural people, and to equip them with an adequate understanding of what modern knowledge and technology have to offer in this respect, without merely replacing all that is useful in their traditional knowledge by our modern knowledge.

The objective should be to reduce to the unavoidable minimum that part of rural research and planning, which takes place away from the countryside and outside the control of the rural people themselves. This does not mean full-scale rural Luddism. It means that the best future course of action is likely to be an eclectic combination of old and new knowledge, in a mixture made and controlled as far as possible by the rural people themselves. This is likely to be best accomplished by creating the conditions in which traditional rural knowledge can change from being mainly a system of classification to being also a means for setting in motion cumulative change.

A difficult task is that of how to make rural people realistically aware of the array of modern ideas and techniques available, without devaluing traditional knowledge and techniques. The problem arises both from rural ignorance of modern

knowledge, and also at times from the assumption by rural people that the resources of modern science are limitless.

The cases described in the literature where local technical knowledge has been tapped, and rural people have played an active part in designing new technologies, all seem to have needed careful nursing by a researcher or other outsider. This is too expensive to spread very far. Now that the principle is established, what is needed are cheap replicable ways of doing the same thing. The answer probably lies in the design of new institutional ways of releasing the creative abilities of rural people and of achieving a synthesis of traditional and modern. The tasks of such institutions would include:

- making possible realistic local level diagnosis of problems and strategy options;
- providing the means for organising technical and social change (which may include reviving or refining old techniques);
- making rural people aware of the range of available modern techniques appropriate to particular tasks.

Such institutional change would have to be accompanied by economic and political safeguards against the familiar prospect of misdirection and appropriation by particular groups or classes, and against certain types of economic process that would swamp reasonable local options at an early stage. The generation of new technologies based on local experience and participation would probably be made easier by policies of national or regional self-reliance, and by policies specifically designed to counteract rural marginalisation and dependence. (This is a two-way process: revaluing and using local knowledge will itself help counteract marginalisation, but it will certainly need help from other government policies, for example in pricing or land tenure.)

The next step in using traditional knowledge and technology is to devise institutions to allow rural people to help create their own economic development strategies and their own new technologies, and to devise national economic and political policies which will make such institutions work.