

# Major developments in and future potential of social science and policy research: implications for agricultural, forestry and fisheries R & D in developing countries

John McIntire

## MAJOR DEVELOPMENTS<sup>1</sup>

1. The locus of knowledge generation has moved. The origin of much of the knowledge relevant for agriculture since the Industrial Revolution was Europe and the countries of European settlement. Given the greater intellectual freedom characteristic of the West relative to the East and South well into the 20<sup>th</sup> century, this was especially true of the social sciences. After World War II, the origin of new knowledge in the social and biophysical sciences has shifted in part to Japan, China, South Asia, and Latin America. *The significance for developing countries is that they now have greater capacity for true innovation and for adapting innovations developed abroad.*
2. An international scientific community, linked by the common use of English, has evolved. The world generation and transmission of knowledge was fragmented before the second half of the 19<sup>th</sup> century and only began to integrate slowly thereafter. After World War II, and coincidentally with the emergence of the United States as the dominant political power, an international scientific community evolved. This community uses English as its principal language for internal communication and for the diffusion of results to other scientists and to the public. *The importance of this for developing countries is that it gives them access to global knowledge at lower cost.*
3. The knowledge production function has shifted in the social sciences. This shift involved:
  - (a) A greater focus on local problems (see para 1) in the newly independent nations;
  - (b) Somewhat faster data collection, owing to technical changes in research methods;
  - (c) Faster and more precise analysis, because of radical changes in data processing and related advances in quantitative methods;
  - (d) Instant communication of data and results (see para 2);
  - (e) Much greater availability of results to non-specialized audiences;
  - (f) Rise of “proprietary” social research (e.g., market surveys conducted and owned by firms who sell products derived from the research) and of “lobbyist” research (e.g., that done by private foundations in the OECD nations).

---

<sup>1</sup> I refer to the main developments that affect the social and policy sciences, not to those in the biological sciences such as the production and extension of modern plant varieties.

- (g) *These developments permit cheaper and faster derivation of results relevant for policy, they engender greater competition among competing opinions, and they allow empirical testing of hypotheses in a way that would have been impossible even in the comparatively recent past.*

4. Many historical questions in the study of economics and society have been settled. At the end of World War II, there were tenacious beliefs that have been totally discredited or at the least rejected in most situations. Such beliefs included:

- (a) Central planning was superior to market economics as the organizing framework for of economic life;
- (b) Closed economies provided better incentives for economic development in poor countries than did open ones;
- (c) Rural production relations in poor areas were governed by “tradition”, were often economically irrational, and might never be understood scientifically in the same manner as those in rich areas;
- (d) Risk aversion was a significant barrier to economic growth and development, and was particularly important among the rural poor;
- (e) Rural supply response was inherently weak, partly because of risk aversion, and was in many instances negative;
- (f) Environmental costs of development could be ignored or were at least of little significance in economic decisions; and
- (g) The scientific methods applicable to the natural sciences could be applied to the social.

5. Economic and demographic growth has caused the economic extinction of some agricultural technologies and their associated social organizations. The best examples are hunter-gatherer societies, nomadic pastoralism, and, to a lesser extent, traditional fishing cultures. In each instance, traditional technologies have been made uncompetitive by their modern rivals. The societies that lived from those technologies have surrendered or retreated to a very modest subsistence.

6. The social sciences, despite the rise of new techniques and knowledge and the demise of many antiquated doctrines, have seen much less revolutionary change than the biophysical sciences. I believe this is because volition and individual decision-making is by definition more important in the social sciences than in the biophysical. The law of unintended consequences will always be important in social behavior in a way that it is not in the behavior of biological or physical systems. This law, produced by the reactions of willful agents to economic and other incentives, makes it impossible to derive reliable predictions from social experiments in the same way that such predictions are possible from biological and physical inquiries.

7. Advances in the social sciences have not always led to welfare improvements.
- (a) *Some policy research has clearly been productive.* Prominent examples are reforms derived from economic theory – the value of open economies, the efficiency of markets, mechanisms to lower the environmental costs of growth – have produced welfare gains by improving incentives for investment, increasing world trade, and lowering costs of pollution. Advances in scientific methods have also produced welfare gains but in a way that is much more difficult to measure. These advances have permitted scientists to abandon many false trails and hence to save time and money. The role of incentives and volition in decision-making is better understood.
- (b) Some doubt is permitted about other advances. Great advances in the understanding of behavior under risk, the nature and magnitude of supply response, and in the shape of rural production relations as determined by behavioral and material conditions of rural areas have not produced welfare gains in the same way that biological advances have. The use of new techniques has not always been productive in generating useful knowledge. The most important illustration of this theorem is that the availability of quantitative models and techniques has led researchers to define problems in terms of what can be studied or modeled not in terms of what is valuable. Some advances – especially in methods – may even have produced welfare losses in the sense that powerful techniques are regularly applied to trivial problems or to problems created by bad policies<sup>2</sup>, hence wasting valuable scientific time and effort.

#### IMPLICATIONS FOR SOCIAL SCIENCE AND POLICY RESEARCH

8. What are implications for policy research of the scientific, economic and demographic changes that began after World War II?<sup>3</sup> A partial list can be identified in (i) the behavior of agrarian societies; (ii) the effects of world trade on growth and income distribution; and (iii) the environmental costs of land use. A common element among items on the list is their impact on the distribution of income between rural and urban classes and between agrarian and industrial nations.

#### **The behavior of agrarian societies**

9. The limits to Boserupian evolution. Such evolution – technical change encouraged by changes in relative factor prices associated with population growth and market access – was an adaptation that raised output and employment under increasing land pressure. It was implicitly a model of a closed economy for goods, labor, and finance. It allowed a steady

---

<sup>2</sup> An example is the number of studies of rich country farm policy using sophisticated techniques when the answers relevant for policy are easily predictable in advance.

<sup>3</sup> I stress “new problems” for public policy research. There are many new problems for proprietary private research, notably in the production and sale of knowledge derived from the biophysical sciences, but they are another issue.

state of modest per capita growth, but could be and often was stable for centuries. The opening of Boserup regions, induced by technical change in production, transportation, and information, makes the model less constant. People can now more quickly adapt to local factor prices by moving, producing radically new goods, adopting truly exogenous technologies unrelated to local primary factor prices, or by receiving investments that were infeasible in a closed region. *The significance of these limits to the Boserup model is that many agrarian societies can quickly become unstable.*

10. The erosion of traditional authority in poor areas. This is not a new problem but it is now more acute, more widespread and faster (see para 9). *None of its causes is new -- the collapse of antiquated political economies, loss of economic power base of rural elites, and emigration induced by low rural incomes relative to urban work – yet the scale of the phenomenon is a novel challenge to research.*

11. The divide between rural and urban people within and across rich and poor countries. One consequence of modern farming techniques, and of Engel's Law, is that the ratio of world food producers to consumers is the lowest that it has ever been. A practical consequence of this, even within comparatively small nations, is that the construction of alliances ("social capital" in modern jargon) between rural and urban people falters because they have little contact with one another except through market interactions and competition for scarce factors (e.g., water conflicts between rural and urban in every arid region of the world; land conflicts in the humid tropics between cities and forests or farms). *The political economy of such alliances, as affected by technical change, shifting factor prices, and the world terms of trade, poses an enduring research problem.*

12. The emergence of three classes of arable agriculture in the tropics.

- (a) First are commercial producers of enough scale and technology to earn competitive returns, acquire information, generate or adapt technologies, and fund lobbies.
- (b) Second are peasants who do not earn competitive returns because their farms are too small and unproductive. These producers either cannot produce enough food for their own consumption, or are the margin of doing so, nor can they generate enough income in other goods to buy enough food. They will depend on public charity and private remittances;
- (c) Third are intermediate groups of varying size as functions of climate, irrigation cost, and other physical conditions of production (rainfall, altitude and slope in particular).

13. The main public policy implication is that the second farming class – peasants of low and variable income with little capacity to invest in knowledge generation – requires investment support and an extended form of social protection if it is not to fall irretrievably behind the rest of the world. *The challenge for social and public policy research is to devise that support and protection.*

### **The effects of world trade**

14. The long-term decline in commodity prices. The problem of price parity was familiar in the US but not so in the rest of the world until the secular price decline that began in the 1950s. This decline creates a persistent disparity of world income distribution away from producers to consumers.

15. The seizure of market power by farm lobbies in rich countries. Those lobbies use market power to harvest subsidies, with indirect and negative effects on the terms of trade of rural people in the poor nations. Farmers in rich countries create lobbies to defend their interests. The rich nation lobbies, because of the structure of the protection erected around them, act against the interests of poor farmers. This creates both an income distribution problem and a market stability problem.

16. *The main challenges for research are the macroeconomic effects of lower commodity prices and the market power of the farm lobbies in the rich countries.*

### **Environment and land use**

17. Environmental degradation is often fastest where the capacity to manage it is weakest. The demographic and economic booms in poor countries in the past 50 years have generated novel environmental stresses. The rich countries can manage those stresses – their principal difficulty in doing so is the political argument about who should pay and when. The poor countries are often unable to manage those stresses for technical and institutional reasons, in addition to the income distribution reasons that afflict the wealthy. *The challenge for research here is to understand the environment costs of agricultural growth in the poor countries; to devise market solutions, where possible, for those costs; and to devise public solutions where market ones are too costly.*

18. The traits of environmental goods demanded by rich populations conflict with agricultural land use. Environmental goods – including private space, quiet, greenery, clean air, and recreational water use – are often produced using “extensive” techniques involving high land-labor ratios. They are therefore inappropriate in densely populated areas unless politics permits extreme inequality in income distribution, which is precisely what happens.<sup>4</sup> In poor countries, the capture of desirable green goods by elites is facilitated by the lack of transparent market mechanisms and further aggravates inequality between those elites and the agrarian poor. *The research question is to develop market mechanisms that prevent elite capture of green goods, consumed by the elites, at the expense of agricultural goods produced and sold by the poor.*

---

<sup>4</sup> For example, the fact that people working in ski resorts are priced out of the housing markets where they live because to build houses for them near the resorts would make the resorts less attractive.