

Empirical Studies in Japan on the Rural Economy of Pakistan

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In this article, I review empirical studies in Japan on the rural economy of Pakistan. My purpose is to identify characteristics of such studies, to discuss policy implications of findings from some of these studies, and to explore the directions of future research agendas. I focus on poverty, agriculture, and education on the one hand, and on research outcomes since the late 1990s on the other hand. I limit the period beginning from the late 1990s because Hamaguchi (1997/2000) presents a nice overview of Pakistan studies in Japan until the mid 1990s including those on the rural economy.

I limit the survey to research results from Japanese social scientists for three reasons. The first and obvious one is that I am a Japanese and therefore in a position to know details of these studies including their logistic backgrounds. The second and more substantial one is that Japan is one of latecomers in economic development, where an attempt to modernize the economy and society began in the late 19th century, and we continue to have many socioeconomic characteristics common to South Asians such as the importance of families in economic behavior. It took several decades for the Japanese economy to take-off so that its real GDP per capita during the 1920s was similar to the level in Pakistan in the late 1990s. Furthermore, Japanese economic data have been accumulated since the late 19th century, enabling us to quantitatively examine the dynamic path of economic development in Japan. In our mindset as well as in statistics, we Japanese thus have a vivid memory of days where poverty and low productivity prevailed in rural areas. This might enable us to derive implications useful to contemporary developing countries. The third reason is a more recent phenomenon of natural disasters such as earthquakes and floods in Pakistan. Because Japan is a country of frequent natural disasters, Japanese perspectives may be useful in understanding economic sequences of natural disasters and the dynamic process of recovery.

Research on rural poverty

I first review studies on three sub-topics of poverty, agriculture, and education in rural Pakistan. Japanese economists have covered a wide range of issues related with rural poverty. Vulnerability of the poor to short-run income shocks is the area which I have been focused on (Kurosaki 2006a, 2009a, 2010, Kurosaki & Fafchamps 2002). Such analysis has been extended to natural disasters such as floods and droughts (Kurosaki 2011a, Kurosaki & Khan 2011, Kurosaki et al. 2011, 2012). Access to land is a key determinant of rural poverty, as empirically shown by Hirashima (1996, 2008, 2011). To overcome the vicious circle, what roles

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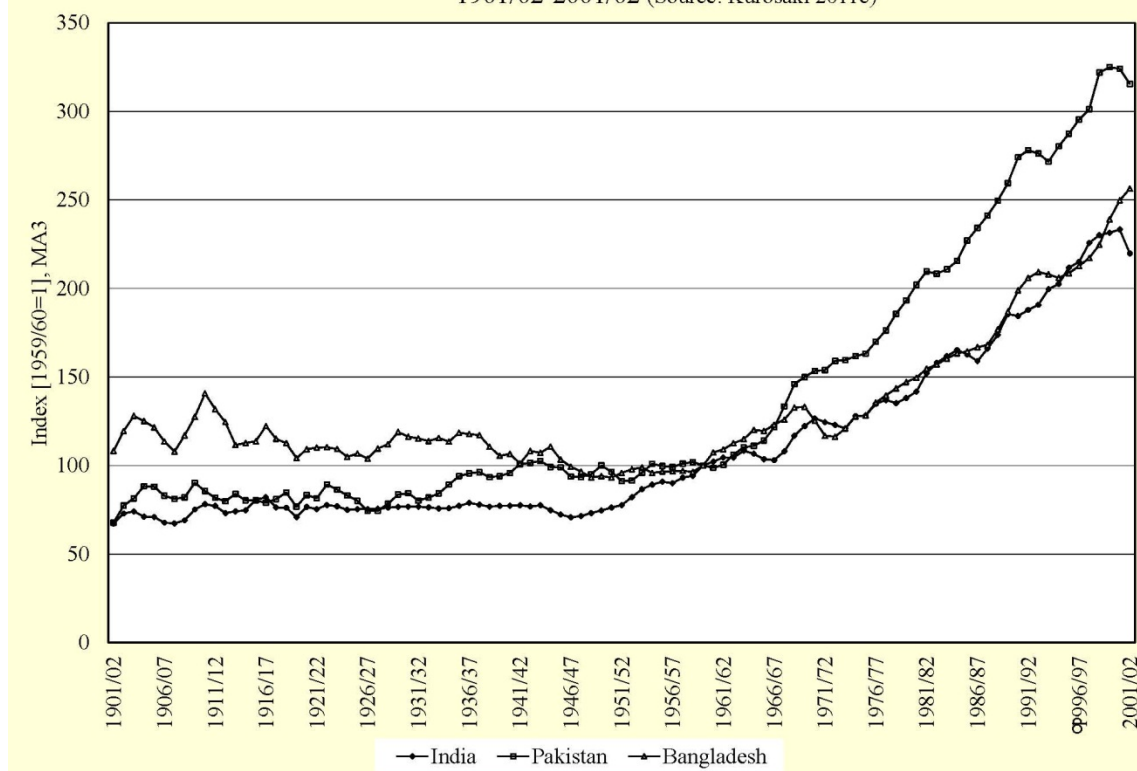
can community-based development play? This has been analyzed by Khan, Kurosaki, & Miura (2011), Kurosaki (2005, 2006b), Kurosaki & Khan (2012), and Nejima (2002a, 2002b, 2006). A more individualized approach to escape poverty is to search employment in lucrative activities, such as rural non-agricultural employment (Suda 2011, Kurosaki and Khan 2006) or migration (Oda 2007, 2008).

For an illustrative purpose, I summarize the findings of Kurosaki (2011a). This paper investigates which households in rural Pakistan were vulnerable to floods and droughts in terms of a decline in their consumption. The regression results based on two-period panel data from Sindh and Punjab show that more landed households were less vulnerable to flood shocks while households with greater access to formal financial institutions were less vulnerable to idiosyncratic health shocks; on the other hand, households in which the household head is elderly as well as households with a greater number of working members bore a larger burden of village-level shocks, while they were not vulnerable to idiosyncratic health shocks. These patterns suggest the coexistence of unequal access to credit markets and risk sharing among heterogeneous households in terms of risk tolerance. The first policy implication of these findings is that the pattern of a disaster's impact on individual welfare is heterogeneous so that targeted interventions are required to cope with natural disasters. Second, the contrast between the impact of droughts and that of floods indicates that whether or not a disaster damages physical infrastructure makes a substantial difference in terms of resiliency. Households have more difficulty in coping with floods than droughts as floods disrupt transport and communication. Third, improving intertemporal smoothing ability of households through developing assets and credit markets is a key to mitigating the ill-effects of floods. Investment in infrastructure such as transport and communication could contribute to higher resilience against natural disasters through both the second and third routes.

Research on agriculture

Both macro and micro aspects of agricultural development in Pakistan have been analyzed by Japanese social scientists. Kurosaki (2002, 2003, 2009b, 2011c) characterizes patterns of long-term agricultural growth at the national and district levels. At the micro level, Japanese scholars cover dairying (Nakasato 2006, Kurosaki & Fafchams 2002, JICA 2010) and nomadic agriculture in Baluchistan (Matsui 2005, 2011). Regarding factor markets, the functioning of land markets is analyzed by Hirashima (1996, 2008, 2011), agricultural labor markets by Kurosaki (2011b) and Oda (1995, 1996), and irrigation by Qureshi & Hirashima (2007) and Nakashima (2000).

Figure 1: Aggregate land productivity (Y/A) in India, Pakistan, and Bangladesh, 1901/02-2001/02 (Source: Kurosaki 2011c)

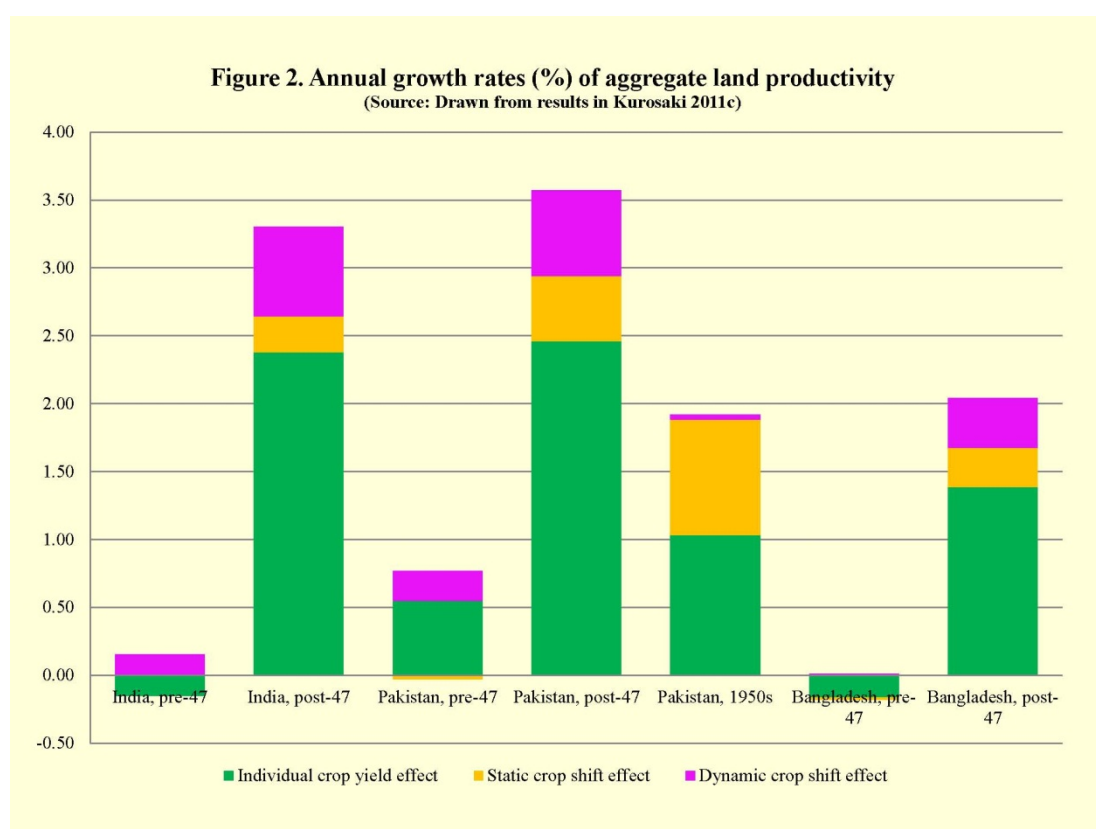


As an example of research findings in this area, I summarize results from Kurosaki (2011c). In this paper, sources of agricultural growth are analyzed at the national level corresponding to the current border from 1901/02 to 2001/02 (Figure 1). Land-productivity gain is decomposed into individual crop yield effect (improvement in per-acre value added of individual crops), static crop shift effect (shift of crops whose value added per acre was higher than other crops), and dynamic crop shift effect (shift of crops whose value added per acre was improving faster than other crops). As shown in Figure 2, crop shift effects explained more than a quarter of the observed productivity gain and they were a particularly important source of growth when technological improvement in crop yields was not significant, such as the 1950s in Pakistan. This paper and related works show the importance of resource reallocation to improve productivity of Pakistan's agriculture. Such reallocation is facilitated by farmers' market-oriented behavior, which becomes more responsive to market incentives when rural infrastructure such as roads, irrigation channels, and regulated markets is developed. Here lies the important role of government intervention. The emphasis of public investment in rural infrastructure reflects the Japanese experience where such investment (coordinated by local communities) played a critically important role in enhancing agricultural productivity and reducing rural poverty. In the Japanese experience, public canals for irrigation, for example, were designed and constructed with active participation of rural communities and the communities took complete responsibility in maintaining these canals (Hirashima & Gooneratne 1996).

Research on education

Japan achieved primary education for all in the first decade of the 20th century (JICA 2004). This was much

earlier than the start of rapid industrialization. Local communities again played a key role in expansion of education in Japan during the last three decades of the 19th century. In sharp contrast, Pakistan is currently struggling to achieve primary education for all, although it has already been in the middle stage of industrialization. Japanese economists have pointed out several obstacles to school education in Pakistan. Sawada (1997) and Sawada & Lokshin (2001, 2009) focus on income risk and the nature of education as an accumulating process conditional on the child's age. They quantitatively demonstrate that transient shocks such as crop failure or loss of employment result in children's drop outs, which cannot be replenished even when the household enjoys a good harvest or lucrative employment later. Gender issues in slowing educational progress are analyzed by Ota (2006a, 2006b). Low economic returns to education in rural areas, especially when educated persons cannot find a non-agricultural, regular job, are pointed out by Kurosaki & Khan (2006).



These studies suggest the importance of improving credit access and safety nets for the poor (the demand side of education) and improving the quality of education, especially in government schools (the supply side) as the means to achieve education for all in rural Pakistan. Given the renewed focus on education in Pakistan (see the Autumn 2011 issue of this *Bulletin*), there is an increasing need to design policies to effectively improve these two sides. In this aspect, it may be worth mentioning about the ongoing project of JICA's Punjab Literacy Promotion Project. The second phase of this project has been just over and we are waiting for the evaluation of the project outcome.

Geographical coverage of primary surveys

I now move to characterize the empirical studies in Japan on the rural economy of Pakistan. One interesting aspect of those studies reviewed above is that the majority of them are based on primary surveys conducted or led by Japanese scholars. This is indeed a tradition of empirical social sciences in Japan. Even among applied economists, the disciplinary training emphasizes the ability to conduct own primary surveys.

The geographical coverage of such primary surveys spreads over Pakistan. The largest number is found from Punjab: Oda (2007, 2008) surveyed villages in Chakwal, Hirashima (1996, 2008, 2011) surveyed villages in Gujranwala and Khanewal, Suda's (2011) field was in Mandi Bahauddin, while Kurosaki & Fafchamps (2002) surveyed farmers in Sheikhpura. Hafizabad district (both towns and villages) was the model district for Kurosaki's (2005, 2006b) analysis of community-based organizations. Oda (1995, 1996) surveyed cotton pickers in Multan while Nakashima (2000) surveyed water users' association in Bahawalnagar. If I include Islamabad as a part of greater Punjab, I can add Ota's (2006b) literacy survey of adult women here.

Japanese social scientists have covered other parts of Pakistan as well. Nakasato (2006) and JICA (2010) investigated the dairy development in Sindh, while in Khyber Pakhtunkhwa, Kurosaki (2006a, 2010) and Kurosaki & Khan (2006, 2011) conducted their surveys in Peshawar District, Sawada (1997) and Sawada & Lokshin (2001, 2009) surveyed households in Dir, and Khan, Kurosaki, & Miura (2011) conducted their field work in Haripur. In Baluchistan, Matsui (2005, 2011) surveyed nomadic communities in Mekran. Research on the Ismailis conducted by Nejima (2002a, 2002b, 2006) is based on his intensive field survey in Gilgit=Baltistan.

Comparative perspective

Another interesting aspect of those studies reviewed above is comparative perspective. Such perspective can place the case of contemporary Pakistan in the relative context.

The rural economy in Pakistan in the Asian comparison is discussed by Hirashima & Gooneratne (1996) in analyzing the role of community and state in local resource management, and by Kurosaki (2011b) in investigating labor institutions involving in-kind wages. Comparison with India is a popular approach in general, to which Japanese economists also join. For example, Hirashima (1996, 2008, 2011) compares rural land markets in India and Pakistan while Kurosaki (2002, 2009b, 2011c) compares long-term agricultural growth. Intertemporal comparison, in which contemporary Pakistan is compared with situations in the same area before 1947, has been attempted as well. See rural land market analysis by Hirashima (1996) and labor institutions analysis by Kurosaki (2011b).

Conclusion

This article has identified the following characteristics of empirical studies in Japan on the rural economy of Pakistan. First, Japanese social scientists have emphasized the importance of primary surveys and tended to

use micro data collected from these surveys. The geographical coverage of these surveys spreads across Pakistan, overcoming the limit of earlier studies reviewed by Hamaguchi (1997) (the earlier studies were mostly concentrated on northern Punjab and Karachi). But the geographical coverage is still limited for rural Sindh and Baluchistan, for which more empirical studies are called for. Second, several Japanese authors have attempted comparative studies, such as the comparison of current Pakistan with situations before 1947 or the comparison of Pakistan with other Asian countries including India. Conducting this type of analysis could be attributable to a data-access advantage of Japanese scholars over scholars based in Pakistan. Third, most of these studies have shown interesting findings from academic viewpoint, which is reflected in an increasing number of research outcomes published in English, including refereed journals with high academic reputation. Fourth, in spite of this, not many of these studies have been successful in deriving concrete and readily-useful policy implications. Considering the potential advantage of Japanese perspectives thanks to its experience of latecomer economic development and frequent occurrence of natural disasters, this is a pity. More policy oriented research is called for. Policy designs in the area of community-based development could be the area to which Japanese social scientists can contribute more, because several field works have been conducted already and Japanese experiences show the positive role of community initiatives. Fifth, despite a modest increase in the number of studies in Japan on the Pakistani economy in recent years, the number is much smaller than those for India and Bangladesh. In future research, the first three characteristics need to be strengthened further, with collaboration with Pakistani scholars, so that the last two characteristics will disappear.

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(Those with * after the year of publication are written in Japanese whose title is translated by T. Kurosaki.)

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