

12.4 Agricultural research, peasant farming and the Green Revolution

Room 202

Convener: Joseph Morgan Hodge

Chair: TBA

This session seeks to better understand the nexus between peasant farming, agricultural research and the history of the Green Revolution in the twentieth century through an international, comparative approach. Each paper offers a different case study. Paper 12.41 examines the first generation of Green Revolution scientists and planners to see if they learned from past development efforts designed to improve peasant farming. Paper 12.42 looks at the case of British tropical agriculture from the late colonial period and asks what legacy and impact it may have had on post-colonial, international agricultural research and development. Paper 12.43 focuses on the Russian/Soviet case, examining how agricultural scientists there dealt with the problem of agricultural modernisation and famines, and looking at the influence they may have had on the Green Revolution and vice versa.

12.41 Jonathan Harwood – Do development programmes learn from experience? Experts reflect upon the weaknesses of the first generation of Green Revolution programmes

As is well-known, the first generation of Green Revolution programmes came under criticism from the late 1960s for failing to serve smallholders. The response during the 1970s and '80s was partly to devise a number of new approaches to development which were designed to remedy this deficiency (eg, participatory plant-breeding, farming systems research). But the criticism also generated a large body of writing in which green revolutionaries reflected upon what had gone wrong and what would be necessary to fix future programmes. Three fundamental issues were repeatedly raised:

- More effort needed to be directed toward decentralising programmes and organising the peasant-farmers whom one wanted to reach.
- Field staff needed to be informed about the problems of peasant agriculture, willing to learn from farmers as well as local experts, and at the most basic level sympathetic to the plight of their resource-poor clients.
- More thought needed to be devoted to which measures would be politically feasible under the circumstances.

The odd thing about these recommendations is that all three of them characterised a number of successful development programmes already before World War Two: in some European colonies from the 1930s, in Japan from 1880 to 1930, and in various peasant-oriented plant-breeding stations in Central Europe from c.1900. The question thus arises whether development practitioners pay much attention to the successes and failures of previous programmes.

I will suggest that the answer depends on which level of a development organisation one examines. At least some of the (natural and social) scientists in the field do seem to be aware of past programmes. Planners/administrators in Washington or London, however, have neither the time nor the inclination to do so. And top-level officials who authorise such programmes are generally indifferent to the issue since development projects are often politically useful – in both donor and recipient countries – whether or not they make any impact upon poverty.

Jonathan Harwood is Professor of History of Science and Technology at the Centre for the History of Science, Technology & Medicine University of Manchester. He was an Invited Fellow, Institute for Advanced Study, Berlin, 1987-88 and Fellow, Dibner Inst. for History of Science & Technology, MIT, 1994-95. His publications include *Styles of Scientific Thought: the German Genetics Community, 1900-1933* (1993); *Technology's Dilemma: Agricultural Colleges between Science and Practice in Germany, 1860-1934* (2005); (with Michael Banton) *The Race Concept* (1975); (as editor) 'Genetics, Eugenics and Evolution' (special issue of the *British Journal for the History of Science* 22, 1989); (as editor), 'Biology and Agriculture', special issue of the *J. History of Biology* 39 (2006).

12.42 Joseph Morgan Hodge – The British 'School' of Tropical Agriculture: approaches, debates and legacies

From 1925 until 1960, the Imperial College of Tropical Agriculture in Trinidad, was responsible for training a steady stream of colonial agricultural administrators and specialists who went to work in various British colonial territories, mostly in Africa, but also in the Caribbean and Asia. They created a network of scientific researchers, ideas, practices and techniques that might be termed the British 'school' or 'tradition' of tropical agricultural research. This paper examines the different approaches, debates and legacies of this colonial science, focusing on a particular cohort of agricultural officers and specialists from the British colonies who went on to work after independence for various international organisations such as the World Bank, the FAO, and the CGIAR system.

This paper shows that British colonial agricultural science was far from monolithic. There was considerable diversity of opinion and debate among agricultural scientists even at the height of the late colonial interventions, which led not only to significant shifts in colonial discourse, mostly profoundly the recasting of tropical nature as fragile and complex rather than axiomatically abundant and fertile, but also to a remaking of tropical agricultural research and practice itself. This was perhaps most evident at the level of practice where development planning was marked by two competing approaches; one more 'peasant friendly' which sought to combine and hybridise expert knowledge with local farmers' practices; and another more taken by technological solutions and mechanisation. Even on the plane of broad theoretical pronouncements and models, a degree of cross-fertilisation began to take place as can be seen in the reappraisal of shifting cultivation among some colonial researchers, although this was by no means universal.

The main question this paper seeks to answer is whether or not the past experiences of these former colonial agricultural experts were processed by the post-colonial, international development industry? As this paper will demonstrate, a significant number of these experts went on to become prominent scientists and specialists, working for such international agricultural research centres as the International Crop Research Institute for Semi-Arid Tropics in Hyderabad, India, the International Maize and Wheat Improvement Center in Mexico, the International Center for Agro-Forestry in Nairobi, and the International Institute for Tropical Agriculture in Ibadan, Nigeria among many others. Yet, the earlier peasant approach to tropical agriculture does not seem to have carried over with them. This paper argues that in the context of the post-Second World War moment of the Cold War and decolonisation, the debate over agricultural modernisation shifted decisively. Proponents of the 'modern package', involving extensive technological inputs of high-yielding seed varieties, chemical fertilisers, mechanisation and large-scale production regimes gained favour, eclipsing the peasant-focused, organic approaches to tropical agriculture that had characterised the mid-century generation of colonial agronomists and field practitioners. Nevertheless, I argue that post-colonial, international agricultural research and development was also not monolithic and that the earlier approaches survived in some circles and networks, only to be resurrected in the wake of disappointment with the early Green Revolution programs. The Farming Systems Research approach in particular, bears close resemblance to earlier efforts, due in part to the contributions of former colonial specialists examined in this study.

Joseph Morgan Hodge is Associate Professor and Director of Graduate Studies, Department of History, West Virginia University. His publications include: *Triumph of the Expert: Agrarian Doctrines of Development and the Legacies of British Colonialism*, Series in Ecology and History, Series Editor: James L.A. Webb Jr, (2007); 'British Colonial Expertise, Post-Colonial Careering and the Early History of International Development,' to appear in a special issue on Approaches to 'Developing' the Non-Western World after 1945, Corinna Unger and Stephan Malinowski (eds.), *J. Modern European History*, forthcoming 2010; 'Colonial Foresters Versus Agriculturalists: The Debate over Climate Change and Cocoa Production in the Gold Coast,' *Agricultural History* 83 (2009); 'Colonial Experts, Developmental and Environmental Doctrines and the Legacies of British Colonialism' in: Karen Oslund, Niels Brimmes, Niklas Thode Jensen and Christina Folke Ax (eds.), *Cultivating the Colony: Colonial States and their Environmental Legacies*, Research in International Studies Series (forthcoming); 'Science, Development and Empire: The Colonial Advisory Council on Agriculture and Animal Health, 1925-1943', *J. Imperial and Commonwealth History* 30 (2002).

12.43 Mark Tauger – Soviet famines, agricultural research, and the Green Revolution

This paper derives from a book I am writing on the history of famines in Russia and the USSR. An important part of that history in the nineteenth and twentieth centuries was the efforts by Russian and Soviet agricultural scientists and other agricultural technical personnel to improve production methods and inputs, including seed. The Russian / Soviet geneticist Nikolai Vavilov contributed to the Green Revolution in his work identifying the geographical origins of important crops, but many other Soviet specialists contributed to this work in other ways. The rise of Trofim Lysenko in the late 1930s held Soviet agricultural sciences back into the 1950s, but his power steadily waned because of the protests of scientists and politicians. Yet even in those difficult years, some Soviet agricultural specialists continued to do legitimate work.

The USSR continued the Russian pattern of chronic crop failures and famines, and in the 1920s continued earlier patterns of famine relief, including food imports. By the late 1920s, however, the Stalin leadership decided that an industrializing country could no longer depend on unreliable peasant farming and undertook collectivisation to modernise agricultural production methods, modeled on the US. For several reasons, when faced with a series of crop failures, the Stalin government in the 1930s and 1940s chose not to import food but rather to try to increase production in the new collective and state farm system. Their efforts were generally successful, but in 1931-1933 and 1946-1947 their efforts were insufficient. The memory of those famines motivated Stalin's successors to change their policies toward crop failures from total self-sufficiency to significant reliance on imports. Yet specialists and political leaders also knew that Russia in the nineteenth century had been a major grain exporter, and they saw the country's increasing dependence on imports as a sign of weakness, of a failure of Soviet agriculture, and made efforts to improve production.

These efforts to reform and improve farm production included not only measures to improve organisation and introduce more equipment, but also to introduce high-yielding semi-dwarf varieties, first from the west and then breeding similar varieties suited to Soviet conditions, from the 1970s. Such varieties began to be widely used in the 1980s, and supported significant increases in Soviet grain production, making post-Soviet Russian, Ukraine and Kazakhstan into major grain exporters again.

Mark Tauger has a PhD in History from the University of California, Los Angeles (UCLA), June, 1991, dissertation: 'Commune to Kolkhoz: Soviet Collectivization and the Transformation of Communal Peasant Farming, 1930-1941'. He is interested in the following fields: Russian/Soviet, Modern European, United States Diplomatic, Eastern Europe (Political Science). He is Associate Professor in the History Department, West Virginia University. His publications include *Golod, Golodomor, Genotsid?* (consisting of seven previously published articles plus two new ones on the 1933 famine in Ukraine and the current political dispute over this, in Russian translation, 2008), 'Modernization in Soviet Agriculture,' in *Modernisation and Russian Society since 1900*, ed. Markku Kangaspuro and Jeremy Smith, Helsinki: SKS (2006), and *Agriculture in World History* (forthcoming, 2011).