

'Good farmers' in Sub-Saharan Africa: evolving narratives

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Abstract: *In this paper, the example of cocoa production in Ghana is used to explore how the narratives portraying African farmers have changed over the last 70 years. These evolving narratives are explored through the notion of a 'good farmer'. The argument is that, as the image of African farmers has been progressively rehabilitated (from ignorant and tradition-bound to skilled and research-minded), the image of formal research and extension has suffered. This reversal was associated with the progressive disempowering of formal agricultural research. With the recent renewed interest in agricultural development, narratives about African farmers are again evolving: 'good farmers' are now increasingly being defined as those who approach their farming as a proper business.*

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The dramatic rise of cocoa as the pre-eminent export crop and engine of the Ghanaian economy is well documented, as is the central role played by small producers in the early development of the sector. From an initial exportation of only 121 pounds of beans in 1884, within 30 years Ghana was shipping upwards of 54,000 tons. This made Ghana the world's largest exporter of cocoa, accounting for some 20% of the international market (Clarence-Smith, 2000). The establishment and growth of cocoa production is a particularly good example of the dynamism and power of small-scale agriculture in West Africa. The area planted to cocoa expanded rapidly on the back of technical, social and economic innovation by the farmers themselves (Hill, 1965). At least in the crucial initial years, there was little if any official encouragement or help from government (Green and Hymer, 1966); indeed, it was only after the industry was well established that a scientific capacity to support it was created. When the state did become interested in the cocoa sector, it used its powers to promote what it defined as the 'proper' methods for production and post-harvest processing, and more generally to exert influence over key steps in the production and marketing chain. In other words, the state stepped in to regulate and profit from cocoa production once the farmers had proved beyond any doubt that it could be a significant source of revenue.

While the motivation for the state's involvement in the cocoa sector was revenue generation, the form of the intervention was rooted in two powerful narratives: the first about African farmers and rural society, and the second about the ability of science and the state to determine and implement reasonable and effective courses of action. Specifically, with farmers commonly described in terms such as ignorant, irrational and tradition-bound, it was the role of the state, through its agricultural research and extension officers, to provide a more productive, rational and modern basis for the agricultural sector.

In this paper, I use the example of cocoa production in Ghana to explore how narratives about African farmers have changed over the last 70 years. The argument is that over this period the public image of African farmers has been progressively rehabilitated (from ignorant and irrational to skilled and environmentally knowledgeable), while the image of the state in the form of agricultural research and extension has suffered. In fact, between the 1950s and the 1990s there was an almost complete reversal in the narratives around farmers and researchers, to the point where it was research and extension that were regularly depicted as ineffective, tradition-bound and so forth. This reversal was associated with the progressive disempowering of formal agricultural research, a situation

that was as unsustainable as the narrative imbalance that characterized the 1950s.

The paper proceeds as follows. In the next section, two key cocoa farmers from Ghana – one a historical figure, the other taken from the pages of an early extension publication – are introduced. The vignettes of Tetteh and Kofi set the stage for the exploration of alternative meanings associated with the notion of a 'good farmer'. Here particular emphasis is placed on the understanding of 'good' in the sense of either 'skilled' or 'obedient'. The subsequent section outlines the process through which, in recent decades, the view of what it means to be a 'good' farmer has become much more inclusive – one perhaps unexpected result of which was a significant undermining of the standing, role and the methods of formal agricultural research and extension. In the final section, I speculate on some implications of this reversal of fortunes, and bring the story up to date with reference to the newest framing of 'good farmers' in Sub-Saharan Africa (SSA).

Tetteh and Kofi: two cocoa farmers

Tetteh

Tetteh Quashie (also spelled Quarshie) was born in 1842 in Christiansborg, now at the centre of Accra. According to Acquah (1999), he was trained as a blacksmith by the Basel missionaries at Christiansborg, and subsequently served as an apprentice at the Basel artisan training school in nearby Osu. After qualifying as a master blacksmith, he worked at the Akropong Experimental Farm at Mampong-Akwapim (24 miles north-east of Christiansborg). In the early 1870s, he travelled to Fernando Po (now Bioko Island in the Republic of Equatorial Guinea) to work as a labourer on the island's cocoa plantations, returning in 1876 (Acquah, 1999) or 1879 (Hill, 1965). According to generally accepted accounts, he carried a small number of cocoa pods with him back to the Gold Coast, and used these to establish trees at both Christiansborg and Mampong-Akwapim. While the plantation at the former site soon failed, the cocoa trees at Mampong-Akwapim thrived and this area became the epicentre of the early development of cocoa cultivation in Ghana.

Tetteh Quashie was by no means the first to introduce cocoa into Ghana. Indeed, from the early years of the nineteenth century, and continuing until the 1870s, Dutch and Swiss missionaries repeatedly attempted to establish cocoa near Accra (Acquah, 1999). By the late 1860s, there was a small plantation at the Basel mission in Akropong, which, despite the attention of a series of Swiss agronomists, continued to suffer from drought and insects. In addition to these earlier attempts to introduce cocoa, some (for example, Hill, 1965) have questioned other elements of the Tetteh Quashie story. Why would a skilled blacksmith choose to work as a common agricultural labourer? Was it Tetteh or one of his relatives who travelled to Fernando Po? Surely, given the number of individuals travelling between this Spanish-controlled cocoa-producing island and the Guinea coast, others must have seen the opportunity offered by cocoa and carried pods or seedlings back to their homes. Yet, despite doubts as to the originality of his actions and queries about the

details of his story, Tetteh Quashie is popularly regarded as the 'father' of cocoa cultivation in Ghana, an activity that remains at the very centre of the national economy. As such, he has the status of a national folk hero with, amongst other things, a major traffic roundabout, a chocolate bar and a hospital named in his honour.

But who was Tetteh? In many ways, he appears to fit comfortably within the 'innovators' category as described by diffusion of innovations theorists (Rogers, 1983). Specifically, Tetteh was educated, skilled and travelled. He was thoughtful enough to make links between what he observed in Fernando Po and what he knew of his own country; based on this, he took a chance that eventually paid very large dividends. Tetteh's interest in cocoa production just happened to coincide with the beginning of what Clarence-Smith (2000, p 27) has termed 'the explosive growth of a mass market for cocoa from the 1880s [that] transformed world consumption more radically than any other time in history'.

Kofi

Our second cocoa farmer is Kofi, who arrives on the scene some 70 years after Tetteh made his historic return from Fernando Po. Kofi first came to public attention as the central character of the extension booklet *Kofi the Good Farmer*, published for the Gold Coast Cocoa Marketing Board in 1950. The booklet introduces Kofi as an 'important man' due to his part in the main industry of the Gold Coast; he has a wife, children and a friend named Kwabena. Kofi is working in what is fast becoming a mature, even troubled industry. Following the almost frenetic establishment of new plantings during the late nineteenth and early twentieth centuries, the total tonnage exported and Ghana's proportional contribution to world production stagnated from around 1930 (Figure 1). Disease (swollen shoot virus and black pod) and pest (capsids) control had become the major preoccupation of government. Despite programmes to support the cutting out and re-planting of diseased trees within existing plantations, many producers seemed content to abandon their older, diseased cocoa farms and establish new plantings in virgin areas.

The cocoa industry to which Kofi contributed was also changing in other important ways. Largely in response to the devastation caused by disease, the Central Cocoa Research Station was established at Tafo in 1938, and represented the first organization in Ghana dedicated to scientific research on cocoa. In 1944, this station was converted into the West African Cocoa Research Institute. With the establishment of the Gold Coast Cocoa Marketing Board in 1947, government involvement in the cocoa sector was set to increase significantly. The board was charged with, amongst other tasks, the control of local purchasing of cocoa, the fixing of prices paid to producers, and more generally the promotion of the interests of cocoa producers. In relation to its responsibility to secure favourable arrangements for the sale of Gold Coast cocoa overseas, the establishment and maintenance of a grading system that would protect the Gold Coast's reputation for quality was of primary importance.

It is in this light that Kofi and his role in history can be understood. *Kofi the Good Farmer* presents him as someone

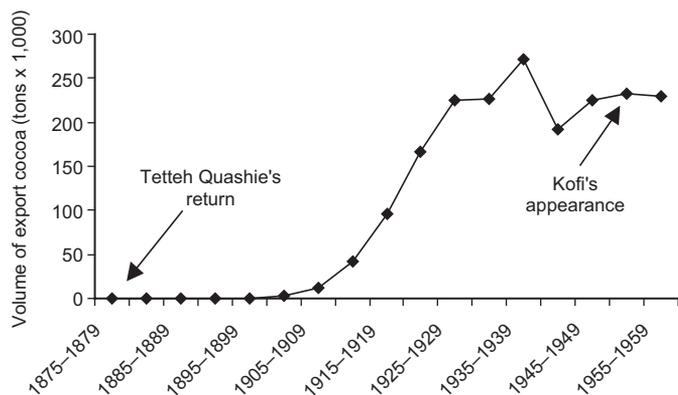


Figure 1. Cocoa exports from Ghana, 1875-1960. Source: Kay (1972), as given in Gunnarsson (1978).

- Inspect farm regularly and remove diseased pods.
- Pluck only ripe pods and take care not to damage tree.
- Take care while cutting the pods.
- Open pods soon after plucking.
- Ferment the beans properly (use plantain leaves, pack beans tightly, turn every second day for seven days).
- Dry beans on trays raised from the ground.
- Discard rubbish and bad beans.
- Store dried beans properly (clean containers, off the ground, away from smoke).
- Grade beans to know the appropriate price before going to the buyer.
- Know your rights if there is disagreement over grading with the buyer.
- Know that the producer's interests are protected – you will always obtain a 'just deal'.
- Know that if you follow the steps – 'take the trouble' – you will get Grade I and top price, and the whole family will be pleased!

Figure 2. The main lessons in *Kofi the Good Farmer*.

who is eager and able to master the key steps in the production of high-quality cocoa. The booklet portrays Kofi in relation to 12 lessons or messages, ranging from disease control and the correct treatment of beans after harvest, to quality grading and channels for appeal if he has a disagreement with a buyer (Figure 2). Kofi learns these lessons well and is rewarded with 'top price' for his cocoa, while his friend Kwabena 'did not take so much trouble and only got Grade II price'.

So, if Tetteh Quashie was a classic 'innovator', Kofi was more of a 'company man'. He was a small cog in a large, international industry, in which the state was taking an ever-increasing interest. He was keen to learn to farm properly and produce cocoa of the highest quality, for he understood that what was good for the industry was also good for him and his family. He was respectful and trusting of the organs of the state such as the Cocoa Research Institute and the Cocoa Marketing Board that were, after all, officially charged with looking after his and his neighbours' interests.

Evolving narratives

'Good' farmers, and others

In the 1950 extension booklet, Kofi is identified as a 'good farmer'. The adjective 'good' is certainly no stranger to the noun 'farmer', but what can be meant by the term 'good farmer'? And if there are 'good' farmers, does it follow that there are 'bad' farmers? Can 'bad' farmers become 'good' farmers?

When associated with farmers, the term 'good' can have at least two distinct but related meanings. The first refers to the possession of high levels of competence, skill or accomplishment. In this sense, a 'good farmer' is a master farmer, a craftsman who knows the environment within which he or she works, as well as the requirements of individual crops, and is able to produce them in a technically and economically efficient manner. The opposite of a 'good' (skilled) farmer is one who is unskilled or poorly skilled, who is unable to manage resources effectively for the purpose of agricultural production. It is fair to say that in the decades running up to the publication of *Kofi the Good Farmer*, 'good' (skilled)

farmers – whether producing cocoa or other crops – were generally considered by the colonial authorities to be few and far between. Rather, local farming methods were often viewed as having no scientific basis, to be wasteful, inefficient and environmentally destructive. Thus a major preoccupation of the state's agricultural officers was education and training, with the specific objective of promoting the recommended practices derived from scientific research.

The second sense of 'good' refers to a farmer who is obedient, who willingly takes instruction and implements 'recommended practices'. Here 'good' reflects not so much the state of the farmer's knowledge, level of competence or success, but rather his or her attitude towards higher authority. It follows that the opposite of a 'good' (obedient) farmer is one that is wilful, strong-minded, obstinate or awkward. Thus, a 'bad' (awkward) farmer pays little heed to the research-based, 'best practice' recommendations promoted by the agricultural extension agent, preferring instead his or her own 'traditional' ways.

These two senses of the adjective 'good' are obviously related, as there is an implicit assumption that by being 'good' (obedient), a farmer can become 'good' (skilled), where skilled is now re-defined in terms of ability and willingness to engage with 'modern' agricultural practices. Similarly, a bad (awkward) farmer who refuses the training offered by the extension agent will remain bad (unskilled). This notion of a 'ladder to goodness', where the rungs represent increasing willingness to implement recommended practices, can still be seen in the system for classifying cocoa farmers presently used by the Cocoa Research Institute of Ghana (World Bank, 1986). It also has echoes in other areas of African agriculture development where progress and development were depicted in linear terms: in The Gambia, for example, the image of a 'mechanization ladder' was used to portray the step-by-step progress towards the ultimate goal of tractor cultivation. After all, could there be any better indicator of a 'good' farmer than the fact of owning and using a tractor?

There can be little question that the booklet *Kofi the Good Farmer* projects Kofi as a 'good' farmer first and

foremost in the sense of being obedient. Kofi learned his lessons well and followed all the best practice recommendations; he farmed, processed and marketed his cocoa in the 'proper', officially sanctioned manner. By so doing, he also distinguished himself as a competent and skilled farmer, and for his troubles he was awarded the coveted Grade I price. In contrast, Kofi's friend Kwabena was less diligent in applying the recommendations, and consequently the quality of his cocoa suffered. The last image in the booklet shows Kofi returning to his wife and children proudly displaying the money he received from the cocoa buyer, and the text indicates that 'they are all pleased because Kofi has got top price for his cocoa'. One can only assume that poor Kwabena's reception on returning home was somewhat less warm.

Let us now return to Tetteh Quashie and ask where he might fit into this portrayal of 'good' farmers. Tetteh was surely something of an adventurer, a maverick; he temporarily gave up his trade (and presumably his farms) to travel and labour abroad, to seek wider experience. He was out for something more. When he carried those few pods back to the Gold Coast, he placed himself outside the world of rules and recommendations, experts, 'proper' behaviour¹ and methods of farming. Thus, the great irony is that with Kofi being used to portray a 'good' farmer essentially as an obedient farmer, Tetteh Quashie himself, the founder of the industry, would have to be considered as 'bad' (awkward).

Tetteh's decision to carry the pods, and the subsequent planting and evaluation of the seedlings, was quite simply an act of innovation, and one that ultimately had dramatic consequences. Yet, despite the acknowledged importance of these acts, within a few decades the state was content to define such innovative behaviour as undesirable, as bad. Why? There would appear to be two possible explanations. First, agricultural officials might have been simply reflecting the now common understanding that behaviour that is appropriate when an industry is in its start-up phase is often inappropriate when it has matured. In other words, the kind of single-minded, entrepreneurial, chaotic, creative behaviour displayed by Tetteh would not help the Gold Coast in the struggle to maintain its position at the high end of an increasingly competitive international cocoa market. The second explanation is both more likely and more basic, reflecting the power of the dominant narrative that portrayed African farmers as ignorant, irrational and tradition-bound. In this view, without intensive training and close monitoring, they could make little contribution to the development of a modern agricultural sector. There can be no doubt that this view informed much agricultural policy and extension practice, and also justified much revisionist history. Indeed, in the case of cocoa, where African farmers were known to have made fundamental contributions, the state persisted for many years in falsely claiming credit for these contributions (Green and Hymer, 1966).

So, by the 1950s, we have the organs of the state responsible for agriculture and rural development defining obedient farmers as 'good', and innovative, awkward farmers as 'bad'. Unfortunately, a large percentage of farmers – whether producing cocoa or other crops – never followed the full set of recommended

practices, and thus, from the point of view of officialdom, would have been considered 'bad'. This raises questions about Kofi's 'goodness': was he really better off having followed all the recommendations, or was he simply a hapless pawn in the state's long-running efforts to subdue and incorporate the rural population? At what point did (or would) Kofi's trust in the organs of the state begin to erode; when was it no longer viable for him to identify his own well-being with that of an increasingly bloated, inefficient and rent-seeking bureaucracy?

Rehabilitating the 'bad' farmers

During the decades following the publication of *Kofi the Good Farmer*, narratives about African farmers slowly began to shift, away from the sense of 'bad' (awkward) and 'good' (obedient), and towards 'good' (skilled). While much of the basis for this change lay in the many detailed anthropological studies of farming communities (Tilley, 2003), the beginning of the formal rehabilitation of the African farmer can be linked to the publication of Allan's *The African Husbandman* in 1965. In Chapter 1, for example, Allan is already building his case for a new and very different view of African farmers:

'traditional land-use systems of Africa are adapted to the limitations of their environments. . . We may assume, therefore, that as communities of men changed their way of life . . . to an increasing dependence on hoe cultivation, they acquired a working knowledge of the soils they used and a means of recognising and distinguishing them. . . All the cultivating peoples did acquire . . . a large body of unwritten knowledge. . . The pastoralists know their grasses. They are, one might say, authorities on grasses.' (pp 3–4)

The process of rehabilitation initiated by Allan has already moved through at least two phases. As illustrated above, in the first stage of this process of reshaping the image of African farmers, the 'good' (skilled) farmer was projected as something of a rural expert and sage. He or she had a detailed understanding of the local environment and resources; was rational, curious, a source of valuable 'indigenous technical knowledge', and latterly, a creator and guardian of essential biodiversity. As farming systems research came to prominence in the 1980s, the farmer described in this way was seen to be well placed to enter into new partnerships with agricultural research and extension. These partnerships were to be built on a more open, two-way relationship, with farmers being brought into dialogue with researchers and other officials, helping to identify problems and, through participation in on-farm trials, to evaluate potential solutions. The re-shaping of the view of rural Africans had the effect of eliminating the category of 'bad' (unskilled) farmers, since nearly all members of society were deemed to have some special, local knowledge and to be making the best of their circumstances and the resources at hand.² Nevertheless, there was still a clear need and role for agricultural research and extension: as long as the researchers alone possessed the Excalibur of scientific testing and experimentation, they would necessarily play a central role in the production of new and useful knowledge.

In the second stage of their rehabilitation, farmers began to be described as ‘research-minded’, and portrayed as ‘innovators’ and ‘experimenters’ in their own right. Now commentators went out of their way to describe the roles that farmers played in developing new techniques or technologies (for example, Brammer, 1980; Biggs, 1980; Rhoades, 1989). In the light of these newly discovered personal qualities, the potential for partnership with research and extension was even greater. Learning from the farmers and maximizing the ‘synergy’ between formal and farmers’ research was suddenly all the rage.³ With this stage in the rehabilitation process, the category of ‘bad’ (awkward) farmers was also re-defined as ‘good’ (skilled): Tetteh Quashie – adventurer, innovator and folk hero – was finally brought in from the cold.

Thus, by the 1990s, the categories of ‘bad’ (unskilled) and ‘bad’ (awkward) had both been re-defined as ‘good’. Alongside this process of re-casting the image of African farmers, the roles, methods and attitudes of agricultural research and extension came under much closer scrutiny. Increasingly characterized as top-down, isolated, elitist, ineffective and so forth, research and extension agents themselves began to be defined as ‘bad’ (unhelpful, disempowering) (for example, see Chambers, 1986; Pretty, 1995). What contribution could research and extension be expected to make if all farmers were already ‘good’ (skilled and innovative)?

Reversal of fortune, and beyond

In the preceding sections, I argued that since the colonial era, narratives about African farmers have been progressively re-fashioned. From being ignorant, inefficient and tradition-bound, farmers are now portrayed as open, knowledgeable and research-minded. In parallel with the farmers’ rehabilitation, agricultural researchers experienced a precipitous fall from grace. No longer revered as the only source of new technology and a brighter (more productive) future, they found their past contributions, motivations, disciplinary loyalties and quantitative methods under close and often hostile scrutiny.

In other words, over 70 years the situation evolved from a presumption that farmers were ‘bad’ (unskilled and awkward) and researchers were ‘good’ (expert, useful) to one where farmers were ‘good’ (skilled and innovative) and researchers were ‘bad’ (unhelpful, disempowering). The predicament was neatly summed up in the motto of the Wenchi Farming Systems and Training Project (Brong Ahafo, Ghana): *Show me the way good farmer*.⁴ The project’s own literature suggested that one objective was to ‘explore ways in which . . . indigenous knowledge can be drawn upon for the benefit of future students and trainees’. So, here the ‘good’ in the motto meant ‘skilled’ and perhaps ‘kind’, with the implication that the student (but also the teacher, researcher and official – the ‘me’ in the motto) was reduced to begging the ‘good farmer’ for guidance.

The framing of farmers as ‘good’ (skilled and innovative) and researchers as ‘bad’ (unhelpful, disempowering) coincided with a period of reduced funding for agricultural research. Developments over the last decade, however, including the African Union’s

Comprehensive Africa Agricultural Development Programme (CAADP), the Alliance for Green Revolution in Africa (AGRA) and the general increase in interest in agricultural development, promise to bring new resources to agricultural research and new attention to the relationship between researchers and farmers. But how is this new relationship being framed?

On the one hand, there has been a shift in focus from research to innovation associated with the incorporation of elements of systems of innovation theory into thinking about agriculture in SSA (Hall *et al*, 2001; Sumberg, 2005; Spielman *et al*, 2009). A well functioning system of innovation would presumably require not only farmers and researchers to be ‘good’ (skilled, innovative) – but also policy makers, input suppliers, agricultural educators and others. In other words, within a systems of innovation framework, a zero-sum game that pits the ‘goodness’ of farmers against the ‘badness’ of researchers (or vice versa) is an anathema.

On the other hand, the new sense of urgency around the development and promotion of productivity-enhancing technology goes hand in hand with narratives that appear rooted in an earlier era. While farmers are not portrayed as ignorant or recalcitrant, they are seen as lacking essential ‘information’. Perhaps more significant is the push to reframe smallholder farmers as (would-be) entrepreneurs, with the associated goal of teaching them to approach their farming as a proper business. Here a ‘good’ farmer – an *African green revolution farmer* – is one who obtains credit from a bank, buys the newest seeds and fertilizers from an agri-dealer and is increasingly oriented towards commercial opportunities. This may well be a viable and enticing development path for some individuals and households in some areas, but what about the others? By defining them as ‘bad’ (non-commercial) or at a minimum ‘not good’, are intervention opportunities that could impact positively on individual and household food security, well-being and the environment potentially being missed?

In any case, if we take the mounting evidence on increasing rural livelihood diversification and de-agrarianization seriously (Bryceson, 1996; Reardon, 1997; Bryceson, 2002; Ellis and Freeman, 2004), we are forced at least to entertain the proposition that in the early twenty-first century the mark of a ‘good’ (successful) farmer in SSA may well be that he or she leaves farming altogether.

Notes

- ¹ Indeed, today such an act would probably land Tetteh in serious administrative difficulties for contravening international plant quarantine regulations.
- ² This general rehabilitation has not stopped some cocoa farmers from claiming and attempting to profit from the mantle of ‘good’: the name of the large and successful Fairtrade cocoa cooperative in Ghana, *Kuapa Kokoo*, translates from the Twi as ‘good cocoa farmers’.
- ³ It is interesting to note the ambivalence around this new narrative. Even from some of those who so actively promoted the idea that farmers were active experimenters, there have been calls for the training of farmers so that their tests and trials are more systematic and more public (Gubbels, 1988; Connell, 1991; Vel *et al*, 1991; cf Sumberg and Okali, 1997), and thus more compatible with formal research.

⁴ This project was funded and implemented by the UK Overseas Development Administration (now the Department for International Development) from 1993 through 1997, and was based at the Wenchi Farm Institute (motto: *Sow with skill, reap with joy*).

References

- Acquaah, B. (1999), *Cocoa Development in West Africa: The Early Period with Particular Reference to Ghana*, Ghana Universities Press, Accra.
- Allan, W. (1965), *The African Husbandman*, Oliver & Boyd, Edinburgh.
- Biggs, S. (1980), 'Informal R&D', *CERES*, Vol 13, No 4, pp 23–27.
- Brammer, H. (1980), 'Some innovations don't wait for experts: a report on applied research by Bangladeshi farmers', *CERES*, Vol 13, No 2, pp 24–29.
- Bryceson, D.F. (1996), 'Deagrarianization and rural employment in sub-Saharan Africa: a sectoral review', *World Development*, Vol 24, No 1, pp 97–111.
- Bryceson, D.F. (2002), 'The scramble in Africa: reorienting rural livelihoods', *World Development*, Vol 30, No 5, pp 725–739.
- Chambers, R. (1986), *Normal Professionalism, New Paradigms and Development*, Discussion Paper 227, Institute of Development Studies, Brighton.
- Clarence-Smith, W.G. (2000), *Cocoa and Chocolate, 1765–1914*, Routledge, London.
- Connell, J. (1991), 'Farmers experiment with a new crop', in Haverkort, B., van de Kamp, J., and Waters-Bayer, A., eds, *Joining Farmers' Experiments: Experiences in Participatory Technology Development*, Intermediate Technology, London.
- Ellis, F., and Freeman, H.A. (2004), 'Rural livelihoods and poverty reduction strategies in four African countries', *Journal of Development Studies*, Vol 40, No 4, pp 1–30.
- Green, R.H., and Hymer, S.H. (1966), 'Cocoa in the Gold Coast: a study in the relations between African farmers and agricultural experts', *Journal of Economic History*, Vol 26, No 3, pp 229–319.
- Gubbels, P. (1988), 'Peasant farmer agricultural self-development', *ILEA Newsletter*, Vol 4, No 3, pp 11–14.
- Gunnarsson, C. (1978), *The Gold Coast Cocoa Industry, 1900–1939, Production, Prices and Structural Change*, The Economic History Association, Lund.
- Hall, A., Bockett, G., Taylor, S., Sivamohan, M.V.K., and Clark, N. (2001), 'Why research partnerships really matter: innovation theory, institutional arrangements and implications for developing new technology for the poor', *World Development*, Vol 29, No 5, pp 783–797.
- Hill, P. (1965), *The Migrant Cocoa Farmers of Southern Ghana*, Cambridge University Press, Cambridge.
- Kay, G.B. (1972), *The Political Economy of Colonialism in Ghana*, Cambridge University Press, Cambridge.
- Pretty, J.N. (1995), 'Participatory learning for sustainable agriculture', *World Development*, Vol 23, No 8, pp 1247–1263.
- Reardon, T. (1997), 'Using evidence of household income diversification to inform study of rural non-farm labour markets in Africa', *World Development*, Vol 25, No 5, pp 735–747.
- Rhoades, R. (1989), 'The role of farmers in the creation of agricultural technology', in Chambers, R., Pacey, A., and Thrupp, L.A., eds, *Farmer First*, Intermediate Technology, London.
- Rogers, E.M. (1983), *Diffusion of Innovations*, 2 ed, Collier Macmillan and The Free Press, New York and London.
- Spielman, D.J., Ekboir, J., and Davis, K. (2009), 'The art and science of innovation systems inquiry: applications to sub-Saharan African agriculture', *Technology in Society*, Vol 31, pp 399–405.
- Sumberg, J. (2005), 'Systems of innovation theory and the changing architecture of agricultural research in Africa', *Food Policy*, Vol 30, No 1, pp 21–41.
- Sumberg, J., and Okali, C. (1997), *Farmers Experiments: Creating Local Knowledge*, Lynne Rienner, Boulder, CO.
- Tilley, H. (2003), 'African environments & environmental sciences: the African Research Survey, ecological paradigms & British colonial development', in Beinhardt, W., and McGregor, J., eds, *Social History & African Environments*, James Currey, Oxford.
- Vel, J., Veldhuizen, L.V., and Petch, B. (1991), 'Beyond the PTD approach', in Haverkort, B., van de Kamp, J., and Waters-Bayer, A., eds, *Joining Farmers' Experiments: Experiences in Participatory Technology Development*, Intermediate Technology, London.
- World Bank (1986), 'Draft report on Third Cocoa Project for Ghana', *Ghana Agricultural Sector Review*, World Bank Report No 5366-GH, World Bank, Washington, DC.