

Online Research @ Cardiff

This is an Open Access document downloaded from ORCA, Cardiff University's institutional repository: <https://orca.cardiff.ac.uk/id/eprint/71278/>

This is the author's version of a work that was submitted to / accepted for publication.

Citation for final published version:

Smith, Thomas Aneurin ORCID: <https://orcid.org/0000-0001-7221-1868> 2011. Local knowledge in development (geography). *Geography Compass* 5 (8) , pp. 595-609. 10.1111/j.1749-8198.2011.00443.x file

Publishers page: <http://dx.doi.org/10.1111/j.1749-8198.2011.00443.x>
<<http://dx.doi.org/10.1111/j.1749-8198.2011.00443.x>>

Please note:

Changes made as a result of publishing processes such as copy-editing, formatting and page numbers may not be reflected in this version. For the definitive version of this publication, please refer to the published source. You are advised to consult the publisher's version if you wish to cite this paper.

This version is being made available in accordance with publisher policies.

See

<http://orca.cf.ac.uk/policies.html> for usage policies. Copyright and moral rights for publications made available in ORCA are retained by the copyright holders.



Local Knowledge in Development (Geography)

Geography Compass

Thomas Aneurin Smith

To cite this article: Smith, T. A. 2011. Local knowledge in development (geography). *Geography Compass* 5(8), pp. 595-609.

Abstract

The use of local knowledge in and for development is a relatively recent phenomenon, entering the realm of development theory and practice from the mid 1970s, yet it has become a key part of the rhetoric and practice of development agencies and academic research. The conceptual and historical background to local knowledge in development, including its roots of 'Western' engagement with 'other' or 'indigenous' knowledges, is key to understanding their more contemporary application in development practice. As local knowledge has entered the development orthodoxy, so a more critical approach has emerged, with particularly important contributions from Geographers, as to the use, application, and conceptual understanding of how knowledges are interpreted and adopted within development. This critique has highlighted the dynamic, political, and spatial nature of such knowledge, and problematises the notion that they are fundamentally 'good' for local development. For Geographers, and those working in development studies, there remain important questions about local knowledge, including how such knowledges are constituted by relationships and networks that go beyond the

local, how such knowledges are ‘learnt’ and (re)produced in time and space, and how the knowledges of still marginalised actors in local communities can be taken account of.

What is local knowledge?

How much do you know about the *local* area around you? The chances are that you know quite a lot. You probably know which streets get flooded during heavy rain, which roads have the worst potholes, which shops have closed down recently, which ones are new, when the place is busy, and when it is quiet. These things are all relatively mundane, yet if someone new came to the area they would have no knowledge of them. This newcomer could spend quite some time finding all this out, but it would be much quicker for them if they *just asked you*. This is effectively what, in development, is meant by ‘local knowledge’. It is the knowledge that people who live in a particular place have about their area. Outsiders, development ‘experts’, do not always know these things, because they are often not from the localities that they work on. Until the mid 1970s, those ‘experts’ of development took little notice of what those people (who development was supposed to be for) actually knew. The lineage of using local knowledge in development is then relatively recent, but to understand where this thought on local knowledge has come from it is useful to consider the longer history of Western engagement with ‘other’ knowledges. The positioning of these two knowledges, either ‘Western’, or ‘local’ goes back beyond recent debates in development, and these earlier conceptualisations have played a key role in how these knowledges are framed in development at present. This paper seeks to guide you through not only the history of local knowledge in development, but also to consider how Geographers have contributed to this field, and to, in the light of

a broad range of critiques, suggest the role that Geography as a discipline can play in the future of local knowledge and development research.

A history of local knowledge in and before development

To some degree the use/inclusion of local knowledge in development theory and practice follows the tracks of post-World War Two development thought (Agrawal 1995). In the classic post-World War Two development paradigm of ‘modernisation’, technology and knowledge transfer from the West were understood as the solution to the problems of development and poverty, and the local knowledge (often referred to as ‘indigenous knowledge’) of people in the ‘Third World’ was dismissed as non-scientific, backward, and a part of the problem (Blaikie et al 1996, Grillo 2002). In this sense, local knowledge was viewed as ‘anti-development’ by the development establishment. However throughout the history of development practice, it has become apparent that these strategies of ‘modernisation’ were often highly irrelevant and inappropriate for the rural poor (Briggs et al 1999, Diawara 2000, Donnell-Roark 1998). From the mid 1970s a series of alternative development approaches to ‘modernisation’ emerged which instead highlighted the need to take account of, and ‘use’ the knowledges of local people in development.

This was the advent of ‘local knowledges *in development*’, and I will discuss this in more detail later. If we look without of, and before the confines of development theory, then the practices of differentiating local/indigenous knowledges from those of the West has a much longer lineage. In an article on Arctic knowledges, Huntington and Fernandez-Gimenez (1999) consider the *historical* uses of local knowledges. They

highlight how Western explorers of the Arctic used the local knowledge of Inuit people for making clothing, building snow shelters, and, often employing them as guides, used their knowledge of the terrain. Indeed this type of interaction is likely true of all Western 'explorers' from the 15th Century onwards, for example, European interactions with Red Indians in the Americas. From the 1940s, scientists in the Arctic used 'indigenous' people as field assistants, and although their use of this indigenous knowledge went largely unrecorded (Huntington and Fernandez-Gimenez 1999), it serves to illustrate how scientists/researchers/explorers from the 'West' were beginning to interact with, and differentiated between, the knowledge of 'other' local people, and those of their own. It is here, in the first interactions between 'Us' and 'Them' that the separation in (modern) Western thought begins between Western and 'indigenous' or 'local' knowledges. Beyond these encounters, the prize for developing local knowledges as a legitimate focus for academic study belongs to the discipline of Anthropology (Sillitoe 1998b). Anthropology is indeed rooted in research into what 'others' know and practice, and has been doing so, as Sillitoe (1998b) argues, for a greater part of a century. In the 1960s, anthropologists including Levi-Strauss were making distinctions between 'primitive' and 'modern' cultures (Agrawal 1995). Wallerstein (1983) even goes as far to contend that, before 1950 (coinciding with the beginnings of the 'modernisation' paradigm) the study of *Africa* was confined largely to the domain of Anthropology (although some Geographers would probably disagree). Unlike the advent of local knowledge for development, in Anthropology the study of these knowledges and practices was seen as an intellectual pursuit, rather than being *for* development (Sillitoe 1998b). Local

knowledge for development is different from this in that there is an implication that the study of local knowledge will effect some action.

If it is the current thinking in development that “to ignore people’s knowledge is almost to ensure the failure of development” (Agrawal 1995, p.2), how is it that the opinion of local knowledge has changed so radically since the modernisation era, when the ‘backward’ practices of ‘the poor’ were understood as obstructive to progress? In reaction to the failings of top-down approaches to development, a series of ‘alternative’ theories and practices emerged from the mid 1970s (Potter *et al* 2003), focusing on the basic needs, equity in development, and later ‘participatory development’ (Binns *et al.* 1997, Potter *et al.* 2003). These alternative approaches surfaced in parallel with ‘alternative’ research models in development, pioneered by Robert Chambers, among others, which sought to access the knowledges of local people to better the processes of local development. Techniques such as Rapid Rural Appraisal (RRA), which emerged in the mid 1970s, surveyed local people’s ‘technical’ knowledge to find ‘solutions’ to development (Chambers 1994a). This approach later evolved into Participatory Rural Appraisal, which sought to work with local people in a more participatory way through research, rather than act as another extractive research technique (Potter *et al* 2003, Chambers 1994a). These more participatory approaches advocated for the direct involvement of the recipients of development, which necessitated accessing their knowledge of local issues in order not just to better understand development problems, but also to reach more appropriate ‘local’ solutions (Chambers 1994a, 1994b, and 1994c). Local people participating in development therefore prioritises their knowledges (McKinnon 2006), participation is itself about *accessing* and *using* these knowledges,

making participatory approaches to development and local knowledges intrinsically linked (Mosse 2001). The presumption is that local people have a very detailed understanding of local conditions, which is invaluable in making development interventions appropriate and effective (Brett 2003). Various research studies have illustrated how detailed this knowledge is, from local peoples knowledge of marine environments in Tanzania (Semesi *et al.* 1998), to farmers knowledge of soils and local environmental conditions in Malawi (Moyo 2009) and New Guinea (Sillitoe 1998a), to detailed histories of local forestry in Côte d'Ivoire and Sierra Leone (Leach and Fairhead 2000).

From a broader perspective, however, we might see this attention to the knowledges of local people as part of a wider, contemporary movement which spans beyond development. Leach *et al.* (2008) argue that the turn towards a more pluralist understanding of knowledge, underway in development in the 1990s, parallels with constructivist and feminist approaches that explored the 'myth of science', which illustrated how knowledge is highly situated (e.g. Haraway 1991, Latour 1993). McFarlane (2006) too highlights, through a reading of Foucault, that the attention to marginalised knowledges is part of a wider 'insurrection of subjugated knowledges', or 'local critiques' of 'global theories' like Marxism, Psychoanalysis, and in the case of development, of modernisation and dependency theories. McEwan (2002) demonstrates the important connections between the local knowledge movement and postcolonial studies. Postcolonial critiques sought to disrupt the legacy of colonialism and destabilise the dominant discourses of the 'West', problematising the way things are 'known'. All of these theoretical turns chime well with poststructuralist approaches in development

studies, which theoretically challenged the fundamental Western assumptions of development (Escobar 1995), as, it was argued, the Western thought which had driven development since the post-World War Two era had led to the failure of development (Agrawal 1996). For poststructuralist thinkers, local knowledges offer ‘alternatives’. In this conceptualisation, Western assumptions about knowledge are fundamentally destabilised. Science becomes just one form of knowledge (Briggs *et al.* 1999), it loses its universal position in recognition of many ‘other’ forms of knowledge (Briggs and Sharp 2004).

In the context of the web of theoretical heredity outlined here, local knowledge has been heralded as the possibility for finding progress *beyond* Western development (Briggs *et al.* 2007). A further aspect of the movement for local knowledges in development is that they are not just to ensure that development is more *appropriate* and effective, but that there is also a moral and ethical right in their inclusion. For some, part of the aim of the local knowledges movement is to foreground the voices of the poor and marginalised (Sanderson and Kindon 2004, DeGrauwe *et al.* 2005), part of the wider goals of the participatory movement (Pain 2004, Cornwall 2002). In the early stages of the incorporation and recognition of ‘local knowledges’, several agencies (including the World Bank (1998), in their widely-cited report), understood local knowledge as a technical solution to be extracted, used locally, or transferred for the purposes of development (Sillitoe 1998a, Briggs 2005). From this viewpoint, local knowledge is only an ‘asset’ held by the poor (Gorjestani 2000), a discrete parcel of knowledge. Instead, the now widely popular conception at least in academic circles is that, by utilising knowledges through participatory means, a degree of empowerment can be engendered

amongst marginalised people at the local level (Blaikie et al 1996). Rather than simply ‘applying’ knowledge, the focus should be on generating it locally (Jakimow 2008), through this processes shifting the site of empowerment, and the site of development, to ‘the local’ (Mohan and Stokke 2000). Local people are then not passive recipients of development aid, but are instead active agents in the process. Green (2004) illustrates how local solutions to the spread of HIV/AIDS, for example by encouraging partner reduction through various social channels, have been more effective in the African context than ‘global’ models of AIDS prevention (such as condom use). Naur (2001a, 2001b) also demonstrates how traditional healers, and their networks across various countries, can provide an alternative and more viable response to HIV/AIDS treatment and prevention compared with expensive methods based on Western drugs. In this sense, not only are local knowledges ‘used’, but local people, their practices and knowledges, become a fundamental part of the solution.

A critical approach to local knowledges

The highly positive way in which the local knowledge agenda was greeted within both the development and research community lead to a whole range of agencies, NGOs, and states taking ‘local knowledge’ on board (e.g. the World Bank, 1998). As the use of local knowledge for development has become an essential part of the rhetoric of development practitioners, so a critique has emerged as to how this has been employed in practice and alongside it a critical approach to the theoretical justification for the use of local knowledge. Firstly, much of the earlier (and still current) writing has tended to romanticise the notion of ‘local knowledge’ (Adams *et al.* 1994). This is perhaps a

throwback to the anthropological study of local knowledges, which, according to Wallerstein (1983), tended to focus the a-historical nature of indigenous people, and the unchanging nature of their societies. In development discourse, local knowledges are constructed in particular ways, for example, local knowledges and practices are often viewed as being ‘in harmony’ with nature, such that local communities were able to exist sustainably with their natural environment (Leach and Fairhead 2000, and for examples of where this trend is still apparent, see Steiner and Oviedo 2004). Early work on local knowledges then tended to see the knowledges themselves, and the communities from which they emerged, as timeless, unchanging, evolving in isolation from ‘outside’ influences, therefore fundamentally rooted in ‘the local’. By implication, such knowledges are understood as inherently ‘good’ or ‘useful’. Several critical studies have challenged this view. Local knowledges do change over time, for many reasons, outlined by Blaikie *et al.* (1996) to include the influence of rapid population growth, migration, disasters, and environmental change. Empirical studies have shown that knowledges respond dynamically to changes (Briggs *et al.* 1999, Ortiz 1999). Most societies have not evolved in complete isolation (Chambers 2008), they do not exist in some kind of vacuum, as historically most communities have interacted with the ‘outside’ (Grillo 2002). Critics argue that essentialising and romanticising about local knowledges in this way is dangerous (Goebel 1998) as it can lead to ‘ethnic triumphalism’ (Bourdillon 2004) in which all local knowledges are seen to have worked perfectly well in the past, so they should continue to do so. Furthermore, when ‘the local’ is understood as essentially ‘good’, the role of ‘outside’ knowledges is neglected. As well as implicitly accepting the ‘status quo’ and denying change (Kapoor 2002), there is also a danger of rejecting

anything that does not stem from ‘the local’, including anything which may come from ‘Western science’ (Erdelen *et al.* 1999).

A clear problem with assuming that local knowledges are always a ‘good’ and therefore appropriate for local development is that these knowledges are never critically assessed. In some cases, local knowledges and practices may be restrictive, conservative, lined with misconceptions and prejudices, or may reflect a lack in local capacity to deal with a particular issue (Chambers 2008). Agrawal and Rous (2006) draw our attention to the case of dealing with HIV/AIDS in communities in India. Here local knowledges and practices associated with the disease may restrict individuals, and particularly women, from accessing information and knowledge on HIV/AIDS beyond what is known locally. Bodeker *et al.* (2000) illustrate further that local traditional healers and the medicines they use may be completely inappropriate for dealing with HIV/AIDS, as they may be based on local superstitions and prejudices which can persecute those who are HIV positive. Local prejudices about HIV/AIDS may encourage the spread of the disease, as it can prevent communication about the associated dangers (Kesby 2000a). Studies have also shown that local practices of resource use may not lead to that particular resource being used sustainably, for example in forestry resources (Klooster 2002), or in wetland management (Dixon 2001). Other authors have gone so far as to suggest that there is a lack of conclusive evidence that development based on local knowledge equals ‘better’ local development (Brett 2003, Cleaver 1999, Jakimow 2008). They argue that there is little evidence that initiatives based on local knowledge actually improve material conditions, suggesting that local knowledge perspectives are employed on ethical and moral grounds, rather than because of overwhelming evidence of their success. Another

major concern is also that local people may not always have the capacity to implement local solutions (Andersson *et al.* 2003, Munyanziza and Weirsum 1999). Local people may need training, guidance, knowledges, or materials from without of their communities in order to achieve significant change (Anello 2003). Bebbington's (2000) work in Ecuador offers a useful balance to these arguments, contesting that “almost everything in development is 'coproduced'” (2000 p. 514), Bebbington suggests that local people must engage 'externally', over a range of networks that extend beyond the local, as a part of their individual and collective development. Rather than assume that local knowledges exclusively hold the 'answer' to local development, recognition must be given to where the practices of development interventions, from the state, churches, or NGOs, may open up new spaces and opportunities for local people (Bebbington 2000, Brett 2003). This therefore acknowledges that there are limits to what local people can be expected to know, and that solutions to local development do not emerge solely from local knowledges.

More recent research on local knowledges had begun to acknowledge its previously neglected political dimensions. Where previous work suggested that local knowledges were held 'collectively' (Sillitoe 1998b), in reality local communities are often far from consensual and homogeneous (Cleaver 1999, Green 2000), and therefore do not produce a uniform 'knowledge' (Bourdillon 2004). Indeed, there may be significant conflict amidst 'the local' about understandings of particular issues (Brett 2003, Goebel 1998). A number of studies have shown how the knowledges of women are significantly different from those of men largely because of different gender roles in local societies (Briggs *et al.* 2003, Myers 2002). Goebel (1998) provides an example from

Zimbabwe where men and women live in quite different 'resource worlds' based on what resources they have access to. In this case study women are more restricted in their access to resources, whereas men, able to venture further beyond the community, tend to have a broader conception of the resources available. Local knowledges are also highly political (Blaikie et al 1996), in the case of gender roles, what is known and done locally can be bound up with maintaining male hegemony (Bourdillon 2004). The political nature of local knowledges then serves to highlight how knowledge within local communities is intimately entangled with power, which in itself is tied to, and a constituent of, social difference (Diawara 2000, Green 2000). Although this is perhaps a lesson which development perspectives should have learnt from postcolonial studies some time ago (Briggs and Sharp 2004, Sylvester 1999, Sharp and Briggs 2006), now it is well recognised, at least in academic research (Desai 2002, Jakimow 2008). Myers (2002) and Tobison *et al.* (1998) both illustrate this point well with case studies from Zanzibar, which highlight how political divisions within communities, poor local leadership, and a lack of social cohesion have lead to conflict over natural resource use at the local level and a failure to sustainably maintain resources. Such evidence flies very much in the face of the poststructuralist and post-development theorists, such as Escobar (1995), and Ferguson (1994), who have put considerable faith in 'alternatives' to Western development appearing from the 'grassroots' (Sylvester 1999), when in fact the evidence here suggests that the power dynamics and conflicts at the local level can be inhibitive to local development.

Further to this, earlier local knowledges work has been criticised for constructing binaries between 'local knowledge' and 'Western science', quite possibly again inherited

from the anthropological tradition, or even from earlier 'encounters' with 'others'. Earlier research work suggested that 'local' and 'Western' knowledges differ on substantive, methodological and epistemological grounds, particularly as local knowledges are deeply rooted in the local environment (Agrawal 1995). However, such claims are wrought through with echoes of the colonial past, taken to an extreme suggesting that there are somehow differences in the thought processes of those of the 'West' and the 'Others' (Sillitoe 1998b). Separating these two 'knowledges' essentially fails because it seeks to separate and fix in time and space particular knowledges that can never be so separated and fixed (Agrawal 1995, 1996). It becomes impossible to demark the difference between science and non-science when we take into account the influence of 'local knowledges' on the development of science (e.g. Huntington and Fernandez-Gimenez 1999). Likewise, many communities combine both local and 'outside' knowledges in pragmatic ways (Briggs 2005, Moyo 2009), and essentialising either knowledge into one category or another is fundamentally unhelpful. Indeed, if we compare such a discursive binary with other such constructs, for example the distinction between 'First' and 'Third' Worlds, between the 'Local' and the Global', or between 'Society' and 'State', it becomes apparent that constructing such a dichotomy is not only unhelpful but also, according to McFarlane (2006), ridiculous. On top of this developing critique of how local knowledge is theoretically constructed has been a critical approach to how local knowledge is used in and for development. From the early stages of its entry into development discourse, local knowledge was seen as highly local, and agencies such as the World Bank were critiqued for assuming that it could be taken 'out of context'. However, if we take this critique to its logical conclusion, and local knowledge is then so

place specific in its utility, how can it then be used realistically as a ‘development tool’ (Briggs et al 2007), or at a scale beyond the local (Sillitoe 1998b)? The answer to this question partly lies in the ‘non-local’ nature of local knowledge. Green (2000) argues that in fact local knowledge is constructed very much from without of that community. Green (2000, p. 74) goes on to argue,

The eclectic nature of what people in an area actually 'know' implies that 'local knowledge' is neither inherently 'local' in its orientation and application, nor in its origins, which are not confined to a single self-generating source or range of practices. People living in rural areas listen to radios, attend schools and travel widely to work and visit relatives.

This suggests that knowledge derived ‘locally’ can still have a part to play in influencing other knowledges beyond the local. There has further to this been a well recognised disjuncture between the rhetoric of local knowledge inclusion by various development agencies and their actual practice (Jakimow 2008). Although many agencies of development now include ‘local knowledges’ in their policies and plans, in practice the institutional conditions of states, NGOs and academic researchers often prevent the incorporation of multiple voices. As McKinnon (2006) illustrates in a case study of Northern Thailand, and Twyman (2000) with participatory conservation initiatives in Botswana, it is all too easy to adopt the rhetoric, yet in practice this often hides the ‘standard’ development approach, sometimes even hiding discourses of subordination and manipulation.

The methodological challenge

The local knowledge perspective in the study and practice of development raises a number of interesting challenges for those conducting research. Researchers must initially tackle the question of exactly *how* local knowledge can be studied, how it can be recorded or experienced, and at what scale (both temporal and spatial) it exists. Several studies have discussed the problem of *expression* of knowledge in the spoken word form, for example, what is spoken can be tied up with what local people may expect an ‘outsider’ wants to hear (Mosse 2001, Andersson *et al.* 2003), leading us to question if what is expressed verbally can be directly correlated with what is *known*. Indeed, knowledge may be expressed as embodied performance (Briggs and Sharp 2004), or may be considered a *skill* rather than a spoken ‘knowledge’ (Sillitoe 1998a). These questions have stimulated a range of experiments with research methods, for example, Kesby (2000a), uses participatory diagramming to deal with the sensitive issue of HIV/AIDS in communities in Zimbabwe. Similarly, Pain (2004), has illustrated how combining photography and spoken word allows young people to express their knowledges. A range of participatory and participant observation techniques have been seen to be highly appropriate, as they go ‘beyond’ the spoken word in allowing participants to express themselves in different ways, often in collaboration with, rather than directed by, the researcher (Kesby 2000b). These methods themselves are, however, problematic in their ‘public’ and ‘collective’ nature, which may simply rehearse local power relations and the marginality of some who may feel that, in public, they cannot speak out (Cleverly 1999). Without significant attention to local power dynamics the research process itself may engender conflict (Sillitoe 2000, Tobison *et al.* 1998, and Timsina 2003). Such

techniques also often focus on the 'moment', a discrete point in time and space, in which knowledges are expressed in the instant of research. Anthropologists may contest the discrete nature of many recent local knowledge studies, which miss the longitudinal nature of knowledge change over time (Intili and Kissam 2006). Davidson (2010) goes even further, to question, in the light of the particular cultures of knowledge she identified amongst rural Diola in Guinea-Bissau, the assumption that those 'asking' about an individual's knowledge have a right to an 'answer'. Davidson highlights the highly 'secretive' nature of Diola public life, that in many circumstances it is socially damaging to publicly 'know' something, and that asking about what an individual knows may seriously challenge local cultural norms. This complicates the assumption that the pursuit of knowledge is an unequivocal right, an assumption which underlies the local knowledge agenda (Davidson 2000). The challenge still remains then, of how local knowledge should be accessed by researchers, and what methods are the most 'appropriate' for this task, and whether, more fundamentally, there is an existing 'right' to access such knowledge.

Beyond accessing knowledge, local knowledge perspectives further question the place of the researcher not only in the field but also in the process of representation. By positioning local people as those who are knowledgeable, the traditional role of the academic/researcher as the 'expert' is significantly destabilised, instead becoming a 'facilitator' of knowledge creation (Goebel 1998). Such a position rejects the notion that the 'expert' knows best (Mohan and Stokke 2000), and at the same time changes the site of the expert, not donning the title instead to local people, but rather inducing a multiplication of sites of the expert, acknowledging the ways in which knowledge is

constructed through multiple actors (Jakimow 2008). Much of this is all very well *in theory*, but how this exactly translates into practice remains to be fully realised. Firstly, the power relations between the research subject and the researcher have not (arguably) fundamentally changed. The communication of local knowledge from local people to and through research is shaped by the context of that research, much of which is still determined by the researcher (Radcliffe 1994). Even with participatory-type methods, there is still a danger that a very specific type of local knowledge is constructed (Sanderson and Kindon 2004). McFarlane (2006), and Sylvester (1999) usefully here point to the postcolonial critique of representation, and highlights Spivak's much cited concern for speaking for the subaltern. Spivak argues that the subaltern (in this case, our 'marginalised', 'local' subject) is always caught in translation (subjected to being translated through Western discourse), and therefore they *cannot* speak. Such a critique is rather damning for those wishing to 'represent' local knowledges, as ultimately any process of representation serves to further secure the marginality of those the researcher wishes to represent. This seems overly pessimistic, and positive moves have been made in methodology in terms of moving beyond 'extraction' of local knowledge (Alumasa 2003) to a more collaborative, reflexive toolkit of research methods that have, allowed those who take part in research in the Global South to self-represent (Pain 2004).

The contribution of Geography

Research on local knowledges, is, by its nature, an interdisciplinary venture, which, according to Sillitoe (2004) should draw not only from the social sciences but also from virtually all fields of science. Geography, as a subject which branches both into the

human and natural sciences, is well placed to offer a significant contribution to our understanding of what people know locally, and how this may become part of local development (Leach *et al.* 2008). Geographers further have a lineage of dealing with the complexity of how knowledge is tied up in social organisation (Adams *et al.* 1994), and much of the methodological techniques advocated for in local knowledge research, for example, participant observation, and various qualitative methods, are already familiar to Geographers (Pain 2004). Here I take a few select examples of Geographers work to highlight the contribution of Geography to the debates around local knowledges.

Human and Social Geography has an important role to play in spatialising debates about local knowledge, and through this analysing the relationships of power inherent in knowledge production and use. The work of Kesby (2000a, 2000b, 2005, 2007), has highlighted the divergence in knowledges about HIV/AIDS between women and men in Zimbabwe, considering how knowledge is expressed in relation to social roles and social inhibitions, and therefore the ways in which gendered power relations govern knowledge production and expression. Goebel (1998), and Briggs *et al.* (2007), in the contexts of Zimbabwe and Egypt respectively, have further highlighted how knowledge can be highly gendered, but importantly how gendered knowledges are constituted through and by gendered spaces. Again in the context of Egypt, Sharp *et al.* (2003) have illustrated that the roles of women are highly dynamic and their knowledges are linked to changing spatial practices, themselves tied to changes in the local environment. To go back to the work of Kesby (2007), but also expressed thought the work of Sharp *et al.* (2003), there is an important discussion of how spaces and knowledges associated with the marginalised should be conceptualised. Both sets of authors suggest that there is a tendency to

associate local knowledges of the marginalised with a ‘resistance’ to Western hegemony, or indeed a ‘resistance’ to local relationships of power. In reality, this is quite false, as changes in knowledge and practice, for example, for local women, may not be acts of resistance to male dominance but may be bound up with survival strategies, some of which may be viewed locally as ‘disempowering’.

Other Geographers have drawn attention to how local people may conceptualise certain ‘taken for granted’ concepts in development. Mercer (2002) describes how Tanzanian people have quite different conceptions of ‘modernity’ and what it means to be ‘developed’ compared to those idealised in ‘Western’ discourse. For example, local Tanzanian discourses of development (or *maendeleo*) often understand ‘participation’ in terms of an individual strategy for gaining material development and social resources, rather than a ‘collective’ endeavour for community development. Tanzanians in Mercers (2002) study highlight the importance of individual self reliance, rather than working as a community or towards local empowerment. Intriguingly, Mercer (2002) illustrates how local people may use ‘local knowledges’ in development projects for individual, rather than collective, gain, and value material empowerment (such as improving the family house), rather than ‘fuzzy’ ideals of ‘empowerment’ associated with the local knowledges/participation movement. This adds up, for Mercer, to a unique ‘development subjectivity’, which may disrupt ‘Western’ preconceived values. McFarlane (2006) takes up similar conceptual problems, critiquing how development knowledges are produced in the West, which reproduces established knowledge binaries. McFarlane instead argues for a radical attempt to be made to engage with different kinds of knowledge and ways of knowing, rather than a liberal attempt to integrate local views into a given position. This

is indeed a task for Human Geographers in the field of development research, to develop new ways of imagining research and places, and to think about how to represent and discover how the world looks from ‘other’ locations. Geography’s long association with studies of resource use and agriculture can be key to an understanding of how local knowledges are associated with these specific issues. Moyo (2009), through a study of farmers in Malawi, illustrates the dynamic nature of local knowledges in response to changing environmental conditions. Moyo highlights how farmers conduct their own cropping experiments, evaluating ‘introduced’ agricultural technologies based on what works locally. Such a focus serves to demonstrate how local farmers are active agents in re-producing local knowledge, which is illustrative not only of an already present dynamic interaction between ‘outside’ and ‘local’ knowledges, but that also local people are not ‘passive’ in receiving knowledges and technologies. Moyo also makes a keen observation, that farmers do not *care* where knowledges come from, they simply want and will use what works best. This again is important in disrupting the moral and ethical imperative often implicit in arguments from advocates of alternatives to development.

The future of local knowledges

Despite the long history of studies in anthropology, and the more recent multiplicity of research conducted under the banner of development, the field of local knowledge research remains open, with a host of unanswered questions that provide exciting and inherently Geographical avenues of enquiry. There still remains much work to be done on improving our understanding of how (local) knowledges are (re)produced across, through, and in space. If local knowledges are constituted not just from ‘the local’, then

how are particular knowledges communicated and constructed across distance (Dixon 2001)? Conversely, if ‘local’ knowledges are constructed through networks across space, how much are they then rooted in the local context (Blaikie *et al.* 1996, Easton 2004)? Agrawal (1995) draws our attention to the fact that knowledges do *exist* both temporarily and spatially, yet we cannot *fix* knowledge either in time or space, which is apparent for both ‘local’ and ‘scientific/Western’ knowledges, which then brings into question the spatial scale at which knowledges might operate. Green (2004) suggests that there may be a ‘national’ scale of ‘local’ knowledge, citing the distinctly Ugandan (or perhaps, African) approach to HIV prevention, or a distinctly ‘Tanzanian’ approach to development aspirations (Green 2000). More research is clearly needed here to broaden ‘the local’ to more fully account for how (local) knowledge is constituted, and to expose their links, networks, and spatiality.

Although there have been calls to move ‘beyond’ the bounded realms of knowledge constructed through the dichotomy of Western/local (Jones 2000), the actual practicality of really ‘blending’ or providing negotiated dialogue between knowledges appears only to occur in a slim number of pioneering research studies and projects (e.g. Easton and Belloncle 2000). One avenue yet to be fully explored is to challenge the ‘place’ of both of these knowledges (Chambers 2008). Western knowledges are commonly conceptualised as ‘placeless’, ‘global’, counterpoised to the rooted nature of local knowledge ‘in place’. However, science is neither monolithic nor hegemonic (Leach and Fairhead 2000, Diawara 2000), it is as culturally embedded as ‘local’ knowledges. Clearly then, there is an important step which has yet to be fully made in development practice, in which practitioners must think quite differently about science and ‘technical’

knowledge (Leach *et al.* 2008). There are further questions here about what is learnt and the process of learning beyond the 'local' scale, for example, McFarlane (2006) argues that the 'South' is still largely understood as a place that knowledge goes to, and little has been done practically to build relationships of exchange (Jones 2000). What McFarlane (2006) suggests is required as a practical step is to begin to open channels to learn indirectly, arguing that much constructive learning occurs circumstantially, unexpectedly, rather than through formal, designed learning opportunities. The challenge remains to proactively build these kinds of linkages and with this to understand how knowledges interact and are constituted through such channels (Ortiz 1999).

Kesby *et al.* (2006) very effectively reveal that certain areas of local knowledge study remain relatively 'taboo' in research studies, for example, sexual knowledge and practice, particularly relating to young people, remains poorly studied, yet an understanding of these is vital in development for research into HIV/AIDS prevention. Similarly, 'other' categories of knowledge within and beyond the local remain relatively ignored, including how religious conviction, or indeed local practices of witchcraft, interacts with local knowledge (Easton 2004). There has been little work on how local people themselves begin to delineate between what they conceive as traditional/modern/religious knowledges. Whilst there has been substantial research on gendered knowledges, there have been comparatively few studies into other social groups, particularly young people. Bourdillon (2004) argues that our knowledge of young people in the 'Global South' is relatively poor, and more research is needed that takes into account their role as active agents of knowledge production. More broadly, there remains a gap in the critique in exploring how certain local knowledges may be

privileged above others in the development process, and exploring how local knowledges create exclusions and differentiation amongst societies. The work of Davidson (2010) begins to investigate this ground through illustrating how, amongst communities in Guinea-Bissau, elder women maintain control over particular realms of knowledge, for example concerning pregnancy and birth, which act to exclude and maintain power over younger women. Knowledge then can be privileged within communities (Davidson 2010), and whilst there has been substantial critique of who is included or excluded in participatory development, this has not been mirrored in critiques of local knowledge, where we should be asking 'whose knowledge counts?' *within* communities. Other authors have probed the avenues of thinking about local knowledge and its dynamic nature through the process of learning, for example, Easton (1999, 2004) and Easton *et al.* (2000), illustrate how local schooling may have a significant role in the current and future interaction of knowledges. For Geographers, it is key here to develop an understanding of how sites and places of learning are constitutive of but also constituted by the interactions that take place through and within them. The focus of local knowledge enquiry can then shift to be more focused on learning, how knowledge is acquired and reworked, as well as what role channels of education can play (Lucarelli 2001, Pence and Shafer 2006).

Conclusions

The local knowledge approach, although relatively recent in development study and practice, has a much longer history not only in Anthropology but also in 'Western' engagement with 'others', and I argue here that this history is important for

understanding the current conceptualisations of local knowledge. The more critical approach to local knowledges, which has emerged over the last decade, has rightly highlighted how the overwhelmingly positive reception of ‘local knowledge’ into development practice has unhelpfully romanticised such knowledges, and in some cases ‘hidden’ behind the rhetoric a lack of engagement in practice. Critically assessing local knowledges, rather than assuming their inherent ‘good’, requires value judgements, a very thorny issue in development. This does not mean that they should be simply avoided. The work of Geographers in this field has begun to answer many of the questions which remain, by investigating the spatial nature of knowledge production, how knowledge and practice respond dynamically to environmental change, and how knowledge is entangled with local power relations. Such work has begun to reconceptualise local knowledges, drawing on and instigating wider debates about how knowledge is produced ‘in place’, but also through wider networks. It raises questions about learning, both locally and ‘beyond’ the local, yet calls for greater depth of exploration into more ‘marginal’ knowledges. There are of course many methodological challenges associated with ‘doing’ this kind of research, but this should be both stimulating and exciting for those working in development research, encouraging further experimentation and thought on how we can know local knowledges.

References

- Adams, W. M., Potkanski, T., and Sutton, J. E. G. (1994) 'Indigenous farmer-managed irrigation in Sonjo, Tanzania', *The geographical journal*, 160 (1), pp. 17-32.
- Aggarwal, R. M., and Rous, J. J. (2006) 'Awareness and quality of knowledge regarding HIV/AIDS among women in India', *Journal of development studies*, 42 (3), pp. 371-401.
- Agrawal, A (1995) 'Indigenous and scientific knowledge: some critical comments' *IK Monitor*, 3 (3).
- .(1996) 'Poststructuralist approaches to development: some critical reflections', *Peace & Change*, 21 (4), pp. 464-477
- Alumasa, J.K. (2003) 'Hanging on the edge of a cliff: my loud thoughts as I walk along the winding path of participatory development in Kenya', in Cornwall, A., and Pratt, G. (eds) (2003) *Pathways to participation: reflections on PRA*, ITDG Publishing.
- Andersson, N., Swaminathan, A., Whitaker, C., and Roche, M. (2003) 'Mine smartness and the community voice in mine-risk education: lessons from Afghanistan and Angola', *Third World Quarterly*, 24 (5), pp. 873-887.
- Anello, E. (2003) 'My pathways to work on participation in local government', in Cornwall, A., and Pratt, G. (eds) (2003) *Pathways to participation: reflections on PRA*, ITDG Publishing.
- Bebbington, A. (2000) 'Reencountering development: livelihood transitions and place transformations in the Andes', *Annals of the Association of American Geographers*, vol. 90, no. 3, pp.495-520.

- Blaikie, P., Brown, K., Stocking, M., Tang, L., Dixon, P., Sillitoe, P. (1996) 'Knowledge in action: Local knowledge as a development resource and barriers to its incorporation in natural resource research and development', *Agricultural Systems*, vol. 55, no. 2, pp. 217-237.
- Binns, T. Hill, T., and Etienne, N. (1997) 'Learning from the people: Participatory rural appraisal, geography and rural development in the 'new' South Africa', *Applied Geography*, 17 (1), pp. 1-9.
- Bodeker, G., Kabatesi, D., King, R., and Homsy, J. (2000) 'A regional task force on tradition medicine and AIDS', *Lancet*, vol. 355, pp. 1284.
- Bourdillon, M.F.C (2004) 'Children in development', *Progress in Development Studies*, 4 (2), pp 99-113.
- Brett, E. A. (2003) 'Participation and accountability in development management', *The Journal of Development Studies*, 40 (2), pp. 1-29.
- Briggs, J., Badri, M., and Mekki, A-M. (1999) 'Indigenous knowledges and vegetation use among Bedouin in the Eastern Desert of Egypt', *Applied Geography*, 19, pp. 87-103.
- Briggs, J., Sharp, J., Hamed, N., and Yacoub, H. (2003) 'Changing women's roles, changing environmental knowledges: evidence from Upper Egypt', *The Geographical Journal*, 169 (4), pp. 313-325.
- Briggs, J., and Sharp, J. (2004) 'Indigenous knowledges and development: a postcolonial caution', *Third World Quarterly*, 25 (4), pp. 661-676.
- Briggs, J. (2005) 'The use of indigenous knowledge in development: problems and challenges', *Progress in Development Studies*, 5 (2), pp. 99-114.

- Briggs, J., Sharp, J., Yacoub, H., Hamed, N., and Roe, A. (2007) 'The nature of indigenous environmental knowledge production: evidence from Bedouin communities in Southern Egypt.', *Journal of international development*, 19, pp.239-251.
- Chambers, C. N. L. (2008) 'Pasua and the politics of environmental management, Tongareva, Cook Islands', *Scottish Geographical Journal*, vol. 124, nos. 2-3. pp. 192-197.
- Chambers, R. (1994a) 'The origins and practice of participatory rural appraisal', *World Development*, 22 (7), pp. 953-969.
- .(1994b) 'Participatory rural appraisal (PRA): Analysis of experience', *World Development*, 22 (9), pp. 1253-1268.
- .(1994c) 'Participatory rural appraisal (PRA): Challenges, potentials and paradigm', *World Development*, 22 (10), pp. 1437-1454.
- Cleaver, F. (1999) 'Paradoxes of participation: questioning participatory approaches to development', *Journal of International Development*, 11 (4), pp. 597-612.
- Cornwall, A. (2002) 'Locating citizen participation', *IDS Bulletin*, 33 (2), pp. 49-58.
- Davidson, J. (2010) 'Cultivating knowledge: development, dissemblance, and discursive contradictions among the Diola of Guinea-Bissau', *American Ethnologist*, vol. 37, no. 2, pp. 212-226.
- De Grauwe, A., Lugaz, C., Balde, D., Diakhate, C., Dougnon, D., Moustapha, M., and Odushina, D. (2005) 'Does decentralisation lead to school improvement? Findings and lessons from research in West-Africa', *Journal of Education in International Development*, 1 (1), pp. 1-15.

- Desai, V. (2002) 'Community participation in development', in Desai, V. and Potter, R. B. *The companion to development studies*, London, Arnold.
- Diawara, M. (2000) 'Globalization, development politics and local knowledges', *International Sociology*, 15 (2), pp. 361-371.
- Dixon, A. (2001) 'Indigenous hydrological knowledge in southwestern Ethiopia', *Indigenous knowledge and development monitor*, vol. 9, no. 3, pp. 3-5.
- Donnell-Roark, P. (1998) 'Indigenous knowledge systems in Sub-Saharan Africa: an overview', *IK Notes 1*, The World Bank.
- Easton, P. (1999) 'Literacy and local governance in a rural community', *IK Notes*, 7.
- Easton, P., Capacci, C., and Kane, L. (2000) 'Indigenous knowledge goes to school: Potential and perils of community education in the Western Sahel', *IK Notes*, 22, July 2000.
- Easton, P. (2004) 'Education and indigenous knowledge' in *Indigenous knowledge: local pathways to global development*, Knowledge and learning group, Africa Region, The World Bank, pp. 18-23.
- Easton, P., and Belloncle, G. (2000) 'Indigenous knowledge: blending the new and the old', *IK Notes 25*, The World Bank.
- Erdelen, W.R., Adimihardja, K., Moesdarsono, H., and Sidik (1999) 'Biodiversity, traditional medicine and the sustainable use of indigenous medicinal plants in Indonesia', *Indigenous Knowledge and Development Monitor*, vol. 7, no. 3, pp. 3-6.
- Escobar, A. (1995) *Encountering development: the making and unmaking of the third world*, Princeton NJ, Princeton university press.

- Ferguson, J. (1994) *The anti-politics machine: 'development', depoliticization, and bureaucratic power in Losotho*. University of Minnesota Press.
- Goebel, A. (1998) 'Process, perception and power: notes from 'participatory' research in a Zimbabwean resettlement area', *Development and Change*, 29, pp. 277-305.
- Gorjestani, N. (2000) *Indigenous knowledge for development: opportunities and challenges*, The World Bank.
- Green, E. C. (2004) 'Indigenous responses to AIDS in Africa', in *Indigenous knowledge: local pathways to global development*, Knowledge and learning group, Africa Region, The World Bank, pp. 18-23.
- Green, M. (2000) 'Participatory development and the appropriation of agency in Southern Tanzania', *Critique of Anthropology*, 20 (1), pp. 67-89.
- Grillo, R. D. (2002) 'Anthropologists and development' in Desai, V. and Potter, R. B. *The companion to development studies*, London, Arnold.
- Haraway, D. (1991) *Simians, cyborgs and women: the reinvention of nature*. Free Association Books.
- Huntington, H. P., and Fernandez-Gimenez, M. E. (1999) 'Indigenous knowledge in the Arctic: a review of research and applications', *Indigenous Knowledge and Development Monitor*, vol.7, no.3, pp. 11-14.
- Intili, J. A., Kissam, E. (2006) 'Fostering education for female, out-of-school youth in Afghanistan', *Journal for Education in International Development*, 2 (1), pp. 1-21.
- Jones, P. S. (2000) 'Why is it alright to do development 'over there' but not 'here'? Changing vocabularies and common strategies of inclusion across the 'First' and 'Third' Worlds' *Area*, 32 (2), pp. 237-241.

- Jakimow, T. (2008) 'Answering the critics: the potential and limitations of the knowledge agenda as a practical response to post-development critiques', *Progress in Development Studies*, 8 (4), pp. 311-323.
- Kapoor, I. (2002b) 'The devil's in the theory: a critical assessment of Robert Chambers' work on participatory development', *Third World Quarterly*, 23 (1), pp. 101-117.
- Kesby, M. (2000a), 'Participatory diagramming as a means to improve communication about sex in rural Zimbabwe: a pilot study', *Social Science and Medicine*, 50, pp. 1723-1741.
- .(2000b), 'Participatory diagramming: deploying quantitative methods through an action research epistemology', *Area*, 32, 4, pp. 423-435.
- .(2005), 'Rethorising empowerment-through-participation as a performance in space: beyond tyranny', *Journal of Women in Culture and Society*, 30, 4, pp. 2037-2065.
- .(2007) 'Spatialising participatory approaches: the contribution of geography to a mature debate', *Environment and Planning A*, 39, pp. 2813-2831.
- Kesby, M., Gwanzura-Ottmoller, F., and Chizororo, M. (2006), 'Theorising *other*, 'other childhoods': Issues emerging from work on HIV in urban and rural Zimbabwe, *Children's Geographies*, vol. 4, no. 2, pp. 185-202.
- Klooster, D. J. (2002) 'Toward adaptive community forest management: integrating local forest knowledge with scientific forestry', *Economic Geography*, vol. 78, no. 1, pp. 43-70.
- Latour, B. (1986) 'The power of association.' In Law, J., editor, *Power, action and belief: a new sociology of knowledge?* Routledge and Kegan Paul.

- Leach, M., and Fairhead, J. (2000) 'Fashioned forest pasts, occluded histories? International environmental analysis in West African locales.' *Development and Change*, 31, pp. 35-59.
- Leach, L., Sumner, A., and Waldman, L. (2008) 'Discourses, dynamics and disquiet: multiple knowledges in science, society and development', *Journal of international development*, vol. 20, pp. 727-738.
- Lucarelli, G. (2001) 'Preserving local knowledge through discovery learning', *Indigenous Knowledge and Development Monitor*, 9 (3), pp. 16-17.
- McEwan, C. (2002) 'Postcolonialism', in Desai, V. and Potter, R. B. *The companion to development studies*, London, Arnold.
- McFarlane, C. (2006) 'Crossing borders: development, learning and the North-South divide', *Third World Quarterly*, vol. 27, no. 8, pp. 1413-1437.
- McKinnon, K.I. (2006) 'An orthodoxy of 'the local': post-colonialism, participation and professionalism in Northern Thailand', *The Geographical Journal*, 172 (1), pp. 22-34.
- Mercer, C. (2002) 'The discourse of *Maendeleo* and the politics of women's participation on Mount Kilimanjaro', *Development and Change*, 33, pp. 101-127.
- Mohan, G., and Stokke, K. (2000) 'Participatory development and empowerment: the dangers of localism', *Third World Quarterly*, 21 (2), pp. 249-268.
- Mosse, D. (2001) 'People's knowledge', participation and patronage: operations and representations in rural development' in Cooke, B., and Kothari, U. (eds) (2001) *Participation: The New Tyranny?*, Zed Books, London.

- Moyo, B. H. Z. (2009) 'Indigenous knowledge-based farming practices: A setting for the contestation of modernity, development, and progress.' *Scottish Geographical Journal*, 125 (3-4), pp. 353-360.
- Munyanziza, E., and Wiersum, K.F. (1999) 'Indigenous Knowledge of miombo trees in Morogoro, Tanzania', *Indigenous knowledge and development monitor*, July 1999.
- Myers, G. A. (2002) 'Local communities and the new environmental planning: a case study from Zanzibar', *Area*, 34 (2), 149-159.
- Naur, M. (2001a) 'Indigenous knowledge and HIV/AIDS', *IK Notes 30*, World Bank.
- .(2001b) 'HIV/AIDS: traditional healers, community self-assessment, and empowerment', *IK Notes 37*, The World Bank.
- Ortiz, O. (1999) 'Understanding interactions between indigenous knowledge and scientific information', *Indigenous Knowledge and Development Monitor*, vol. 7, no. 3, pp. 3-6.
- Pain, R. (2004) 'Social Geography: participatory research', *Progress In Human Geography*, 28, 5, pp. 652-663.
- Pence, A., and Schafer, J. (2006) 'IK and early childhood development in Africa: the early childhood development virtual university', *Journal for education in international development*, 2 (3), pp. 1-16.
- Potter, R.B., Binns, T., Elliot, J.A., Smith, D. (2003) '*Geographies of development*', Pearson, Prentice Hall.
- Radcliffe, S. A. (1994) '(Representing) post-colonial women: authority, difference and feminism', *Area*, 26 (1), pp. 25-32.

- Sanderson, E., and Kindon, S. (2004) 'Progress in participatory development: opening up the possibility of knowledge through progressive participation', *Progress in Development Studies*, 4 (2), pp. 114-126.
- Semesi, A. K., Mgaya, Y. D., Muruke, M. H. S., Francis, J., Mtolera, M., Msumi, G. (1998), 'Coastal resource utilization and conservation issues in Bagamoyo, Tanzania', *Ambio*, 27 (8), pp. 635-644.
- Sharp, J., Briggs, J., Yacoub, H. (2003) 'Doing gender and development: understanding empowerment and local relations'. *Transactions of the Institute of British Geographers*, NS 28, pp. 281-295.
- Sharp, J., and Briggs, J. (2006) 'Postcolonialism and development: new dialogues?', *The Geographical Journal*, 172 (1), pp. 6-9.
- Sillitoe, P. (1998a) 'Knowing the land: soil and land resource evaluation and indigenous knowledge', *Soil Use and Management*, 14, pp. 188-193.
- (1998b) 'What, know natives? Local knowledge in development.' *Social anthropology*, vol. 6, no.2, pp. 203-220.
- (2000) 'Let them eat cake: Indigenous knowledge, science, and the 'poorest of the poor'' *Anthropology today*, vol. 16, no. 6, pp. 3-7.
- (2004) 'Interdisciplinary experiences: working with indigenous knowledge in development'. *Interdisciplinary science reviews*, vol. 29, no. 1, pp. 6-23.
- Steiner, A., and Oviedo, G. (2004) 'Indigenous knowledge and natural resource management', in *Indigenous knowledge: local pathways to global development*, Knowledge and learning group, Africa Region, The World Bank, pp. 30-33.

- Sylvester, C. (1999) 'Development studies and postcolonial studies: disparate tales of the "Third World" *Third World Quarterly*, 20 (4), pp. 703-721.
- Timsina, N. P. (2003) 'Promoting social justice and conserving montane forest environments: a case study of Nepal's community forestry programme', *The Geographical Journal*, 169 (3), pp. 236-242.
- Tobisson, E., Andersson, J., Ngazi, Z., Rydberg, L. (1998) 'Tides, monsoons and seabed: local knowledge and practice in Chwaka Bay, Zanzibar', *Ambio*, 27 (8), pp. 677-685.
- Twyman, C. (2000) 'Participatory conservation? Community-based natural resource management in Botswana', *The Geographical Journal*, vol. 166, no. 4, pp.323-335.
- Wallerstein, I. (1983) 'The evolving role of the African scholar in African studies', *Canadian Journal of African Studies*, 17 (1), pp. 9-16.
- World Bank (1999) *World development report 1998/9: knowledge for development*.
World Bank/Oxford, University Press.