

# “Indigenous Knowledge” and Development: The Anthropological Perspective

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*Indigenous knowledge (IK) is a body of knowledge associated with the long-term occupancy of a certain place. It is experiential, informal, uncodified knowledge, as opposed to the “literate” or “expert” knowledge typically attributed to Western science. However, not all scholars agree with this distinction, and some question the category of IK itself. The conceptual issues of the relation between IK and Western science are at the core of the debate surrounding the interpretation of the use of IK in development practice. Integrating IK into development operations poses many challenges. These are mostly related to the assumptions that both the strengths and the weaknesses of IK can be deduced from its local, situational character and that IK is dynamic and difficult to grasp and represent. Notwithstanding these difficulties, a large part of the literature provides ample evidence to support the benefits of utilizing IK in development activities, but in recent years even this view has been questioned.*

**C**an indigenous knowledge (IK) be a vehicle to put in practice what is often only programmatically called empowerment and self-reliance of local communities? Or has the concept of IK been construed in such a way as to run counter to the interests of the people it claims to serve?

## What Is IK?

What is meant by “indigenous knowledge” is by no means clear, and many scholars have debated at length both the concept and its name.<sup>1</sup> I will first present a definition of IK that will then be challenged in the following section of this article,

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which describes the controversial relationship between IK and science. In summarizing the distinctive features of IK as most authors describe them, it is necessary to warn that other scholars have reservations about some of the attributes listed below, or question the category of IK itself.<sup>2</sup>

Indigenous knowledge is “a body of knowledge associated with the long-term occupancy of a certain place.”<sup>3</sup> IK is “tacit, intuitive, experiential, informal, uncodified knowledge,” as opposed to “literate” or “expert” knowledge typically attributed to Western science. IK is local, orally transmitted, empirical rather than theoretical, repetitive, fluid and negotiable, shared but asymmetrically distributed, largely functional, and embedded in a more encompassing cultural matrix.<sup>4</sup> IK is a consequence of practical engagement reinforced by experience. However, it is not only a traditional or rural or “alternative” form of knowledge: it is in principle “a universal mode of knowledge and knowing.”<sup>5</sup>

In general, this object of anthropologists’ interest has been codified as “indigenous knowledge” (or comparable expressions) in the last 20 years.<sup>6</sup> Anthropologists, however, appear divided on the interpretation and use of IK in development interventions. Some scholars define local knowledge as human capital, and consider integrating IK as a way to significantly improve the outcomes of development programs and projects.<sup>7</sup> Others use IK to criticize Western approaches to development on a fundamental level, showing how IK changes when it is taken from its local cultural context and entered into the discourse of scientists, political decisionmakers, and development workers.<sup>8</sup> This often is done in such a way that IK eventually runs counter to the interests it claims to serve.<sup>9</sup>

Before analyzing these two different approaches, a major issue concerning the treatment of IK needs to be discussed. In accenting its importance, IK theorists such as Robert Chambers, David Brokensha, and Michael Warren are caught in the horns of a dilemma.<sup>10</sup> On one hand, an understanding and appreciation of local ideas and practices is at the heart of anthropology, and advocating IK means introducing a more explicit anthropological perspective into development, with the goal of bringing in a locally informed viewpoint. On the other hand, talking about IK implies a dichotomy between indigenous and Western knowledge that many earlier anthropologists have already debated inconclusively.<sup>11</sup> Whether local knowledge is ultimately equivalent to the knowledge gained through science, or is structured entirely differently, is in fact an age-old topic of anthropological debate.

## **IK vs. Western Science**

The definition of IK can in part be formulated as a negative: that which does not belong to dominant Western scientific knowledge. The expression “indigenous knowledge” itself suggests a dichotomy. For some, this dichotomy forces a logic of “us” and “them,” and implies the hegemonic opposition between a folk or embodied knowledge and a high or systematized knowledge.<sup>12</sup>

Ultimately, all expressions we use to name the kind of knowledge described above—“indigenous,” “local,” “traditional,” “folk,” and “people’s”—derive their meaning from the modernity-traditional dualism that anthropologists have learned to treat with suspicion. As Paul Sillitoe points out, despite globalization and the fact that identical intellectual capabilities structure all human knowledge, different cultures continue to give people different understandings of the world.<sup>13</sup> It follows that the perception of “us” and “them” is inescapable in some measure.

The main approaches to the relation between IK and Western Science can be summarized as follows:

***IK is distinct from Western science.***

Several anthropologists use IK to criticize development measures founded on Western science.<sup>14</sup> Most agree that IK has been grossly ignored and undervalued in dominant development paradigms since colonial times, when scientific knowledge occupied an almost hegemonic role as a pillar of Western cultural dominance.<sup>15</sup> The criteria of what constitutes knowledge, what is to be excluded, and who is designated as “qualified to know” involve acts of power.<sup>16</sup> Colonial powers determined what counted as knowledge, and who counted as expert or as innovator.

This hegemony persists in current development practice. Even if it is not stated explicitly, the prevailing attitude is that development experts “know” something, while the population “believes” something. Claims to knowledge and the attribution of ignorance are central themes to development.<sup>17</sup> With the rise of modernity, and its idea of development being governed by rational progress, traditional knowledge became a kind of ignorance.<sup>18</sup> In development work, this is manifested practically in devaluing or ignoring local knowledges in favor of Western scientific, technical, and managerial knowledge.

Not only are IKs ignored or dismissed, but the nature of the problem of underdevelopment and its solution are also often defined by reference to the Western world-ordering knowledge.<sup>19</sup> Scientific knowledge plays a key part in the dominant approach to development, in which development is a solvable problem, or a condition requiring a cure.<sup>20</sup> From this perspective, in order for peoples to progress, they first must be viewed as “underdeveloped” and/or ignorant. Without such underdevelopment and ignorance, the West could not represent itself as developed and possessing knowledge. A striking feature of these representations is that they often depict a state of affairs requiring action or intervention of some kind, usually by the party doing the depicting.<sup>21</sup> Such constructions have implications for power relations, in that people are constructed as either subjects or objects, agents or patients, according to different kinds of knowledge.

The distinction between IK and Western science can therefore be analyzed in terms of agency.<sup>22</sup> IK constitutes people as potential agents, while scientific knowledge generally represents the superior knowing expert as agent, and the people being

developed as ignorant, passive recipients or objects of this knowledge.

The distinction between IK and Western science also can be analyzed in terms of transferability, or its relation to context.<sup>23</sup> Science produces information that can be transferred without transformation to any spatial or social location—i.e., science searches for knowledge that does not change depending on the context. IK is very rich in contextual details, but has little utility outside of particular places.

### ***IK and Western science are not distinct.***

Authors such as Arun Agrawal reject the category of IK itself, claiming that the attempt to create two categories of knowledge—indigenous/traditional vs. Western/scientific—fails on substantive, methodological, and contextual grounds.<sup>24</sup> The definition of IK as closed, non-systematic, and holistic, versus science as open, systematic, objective, and analytical, is flawed. In fact, most philosophers of science have long abandoned the hope of a satisfactory methodology for distinguishing science from non-science. The same knowledge can be classified either way, depending on the interests it serves, the purposes for which it is harnessed, or the manner in which it is generated. Therefore, they argue, it makes much more sense to talk about multiple domains and types of knowledge and move away from a dichotomy which “idealizes and obscures knowledge and practices, disempowering peoples and systems through artificially constrictive frameworks.”<sup>25</sup>

### ***IK and Western science are neither completely different nor entirely the same.***

Somewhere between these two opposing views, Christoph Antweiler argues that it is necessary to look at the intermingling of knowledges and the complex relations among them in situations of cultural contact seen throughout the course of history.<sup>26</sup> He assumes that IK and Western science “display both commonalities and differences.”<sup>27</sup> The main dilemma between the arguments that use IK to criticize development measures founded on Western science is the radical polarization of IK on the one hand and of scientific knowledge on the other. These arguments see the two as mutually exclusive, despite the fact that they have many things in common and could be mutually enriching. This black-and-white polarity supports the widespread belief in a dichotomy which is “factually untenable” and “politically dangerous,”<sup>28</sup> as it can lead to knowledge chauvinism either of a positive, idealizing kind or a negative, derogatory kind.

The conceptual issues of the relation between IK and Western science will reappear in the following sections of this article, dealing with the use of IK in development practice—particularly in the critical literature described later.

## **IK in Development Practice**

A large part of the literature on the subject provides ample evidence to support the benefits of utilizing IK in development activities.<sup>29</sup> The basic assumption is

that local people do know a great deal about the environment in which they often have lived for generations. This knowledge must be taken into account in the planning and implementation of development interventions if these interventions are to be effective and acceptable to the people. In principle, IK is relevant to all grassroots or beneficiary-oriented efforts, since it is the knowledge that local actors themselves possess and that is subject to little extraneous influence.<sup>30</sup> “It can therefore contribute to measures which begin where people are, instead of where others want them to be.”<sup>31</sup> In this framework, the main preoccupation for the development practitioner is to identify and correctly assess the general significance and particular relevance of IK in a given situation, as well as to examine the context in which that local knowledge is located. The question then is how local knowledge can be effectively applied and further developed for a sustainable development process.

However, when IK is integrated into development operations, several issues emerge. These are mostly related to the assumptions that both the strengths and the weaknesses of IK can be deduced from its local, situational character and that IK is dynamic and difficult to grasp and represent.<sup>32</sup> The greater risk is that IK is simply incorporated or added to measures conventionally planned and implemented.<sup>33</sup> It is common practice to evaluate the content of IK in the planning phase of a project, add some ideas to the project design, and then disregard IK and its content during implementation. However, experience has shown that the documentation of IK is not an end in itself; instead, it needs to be an instrument used throughout the process from planning to implementation.

The biggest difficulty in trying to integrate IK into development strategies and interventions lies in the ethnographic specificity of IK research.<sup>34</sup> IK is a type of knowledge that, outside of its cultural situation, loses its frame of reference. IK therefore needs to be understood within its cultural location. This presupposes that those responsible for the design and implementation of development interventions that use IK are aware of the systematic character of culture as seen by anthropologists. By definition, IK research is small-scale, culturally specific, and geographically localized, while development typically demands a broad, generic approach. Developers are therefore likely to adopt models that are generalizable or that appear to offer the greatest predictability or semblance of control over events.<sup>35</sup> Furthermore, understanding another knowledge tradition is a long-term task, while development projects typically have a short-term orientation and a politically driven requirement of quick returns. One danger is that IK may produce a collection of exotic ethnographic documentation and data-bases that are sterile and static from a developmental perspective, even potentially disempowering people by representing their knowledge in ways inaccessible to and uncontrollable by them, and perhaps infringing on their intellectual property rights.<sup>36</sup>

Then there are the difficulties associated with trying to reconcile IK with scientific/Western knowledge. The pragmatic approach, in the case of concrete de-

velopment measures on the ground, is to assume that the ratio of local to scientific knowledge will vary, depending on the case and situation at hand.<sup>37</sup> Yet this overlooks the difficulties in achieving a meaningful understanding of others' knowledge, let alone communicating it to others and making connections to their work.<sup>38</sup> Western scientific knowledge dominates large parts of the world and many sectors of the economy and scientific knowledge tends to imply the ignorance of other types of knowledge, as discussed above.<sup>39</sup> At the same time, IK is most often transferred between generations by traditions learned and communicated through practical experience, or by using symbols, myths, and rites, all of which are idioms alien to science.<sup>40</sup> The problem is then how to facilitate meaningful communication between scientists and local people. The uncertainty remains, however, as to how IK changes when it is taken from its local cultural context and entered into the discourse of scientists, political decisionmakers, and development workers. This question will be at the core of the critical approach reviewed in the next section.

Finally, IK can too easily be idealized as providing an anchor against "inhuman" Western science. Practices based on IK are not necessarily environmentally sound or socially just.<sup>41</sup> The need for individual survival goes hand in hand with the development of a short-term perspective on the use of natural resources, often resulting in their depletion or destruction. Additionally, IK is not necessarily democratic or critical of control structures, and is not necessarily shared by all or even most members of a group. Differences will exist along gender, age, class, and occupational lines, and also among individuals of similar social status.<sup>42</sup> The focus on IK and participation therefore threatens power relationships at every level. IK research has to address the question of whose knowledge it is going to privilege. Researchers must keep in mind that the privileging of some knowledge over others will extend a degree of power to those who hold that privileged knowledge, or, alternatively, that making such knowledge widely known may undermine the position of its holders. The role of anthropologists is therefore to help predict possible social consequences of development interventions.<sup>43</sup>

In conclusion, utilizing IK in development work poses many challenges. Yet many remain convinced that integrating local knowledge in development work, with the help of anthropologists' skills and insights, could be one of the major vehicles to put into practice what politicians call the empowerment and self-reliance of local communities. However, this view has been challenged in recent years by a more critical literature, which starts from the same issues, but reaches very different conclusions.

## **The Concept of IK Deconstructed**

If one accepts that many failures of development are due to the privileging of modern, global, scientific knowledge over local, traditional, indigenous knowledge, then a corollary premise is that reversing this imbalance (based on the study and utilization of IK) will provide a means towards successful development strategies. Under this

premise, ignorance of knowledge that lies outside modern scientific traditions is the problem; unearthing and studying this indigenous knowledge provides a solution. Anthropologists, followed by mainstream development practitioners, initially heralded this logic as a great step forward against the dominant development paradigm. However, the most recent critical anthropological literature has questioned the genuineness of this approach, showing how IK has become a major concept within development discourse as the new “quick fix,” a convenient abstraction that can be added to Western paradigms.<sup>44</sup> As IK is analyzed and documented for use, transferred to the scientific expert and made to serve management objectives, it becomes bent and twisted according to the specific orientations and agendas of those using it, and eventually runs counter to the interests and ideals of local people. The mainstream approach removes people’s agency,<sup>45</sup> facilitating the appropriation of IK by non-local agents. Practices and techniques are then imposed as top-down development, thus defeating the objectives of participatory development and local empowerment that IK-oriented theory expounds. In sum, this approach establishes and legitimates itself in the same way as did previous Western-centered development theories and thus fails to provide a valuable alternative to the much criticized models.

The arguments underlying these conclusions can be clustered around two related issues: (1) decontextualization of IK, and (2) the attempt to validate IK by adopting the methods of Western science.

### (1) *The Decontextualization of IK*

Beyond the rhetoric about the importance of the “cultural dimension” of development, the current literature on IK presents it as largely separate from the society and culture in which it originates.<sup>46</sup> IK is reduced to bits of knowledge disembodied from the rest of culture, typically collected under conditions of “rapid rural appraisal” in the framework of “participatory approaches,” and then added to development interventions conventionally planned and implemented. Specific utilization patterns are separated into isolated parts for scientific purposes<sup>47</sup> and lead to a general kind of analysis suggesting the existence of a body of knowledge independent of the context in which it arises.

The standard analyses present inventories of people’s knowledge, providing documents for, rather than about, people. For example, Alcorn lists all the resources that can be extracted from local farmers (“principles, facts, technologies, crops, farming systems, strategies, information on local constraints and opportunities”) and maintains that “traditional farmers have developed *packages of practices* for tropical forested lands, arid lands, steep lands, swamp lands, and other marginal lands.... These systems integrate useful wild plants into their management regime” (italics added).<sup>48</sup> By presenting these systems as “packages of practices,” all agency and creative, dynamic potential is drained, reducing local knowledge to a commodity.

To attempt to extract a “knowledge for development” while ignoring people’s

other beliefs suggests a level of arrogance.<sup>49</sup> Indigenous peoples are not merely technicians but are also scientists who have complex systems of classification and abstract philosophical ideas, and who can provide systematic accounts of various aspects of the world.<sup>50</sup> Moreover, while conventional descriptions of IK may emphasize its being rooted in a “community” and argue for the systematicity of IK across a “culture,”<sup>51</sup> they seem to ignore the dynamic nature of farmers’ knowledge. Such knowledge is constantly refashioned with the passage of time and interaction with non-local forces. What comes to be represented as local knowledge to outsiders “involve(s) aspects of control, authority and power that are embedded in social relationships.”<sup>52</sup> IK and traditions often contain sites and sources of cultural disempowerment for some groups, particularly women and ethnic or cultural minorities.<sup>53</sup> The kind of IK mobilized within “participatory” programs for development interventions is presumed to be common to all groups within a village, regardless of their differing interests. But knowledge and access to it is differentiated by class, gender, age, and occupation, as well as specialization and degree of expertise, and also reflects local power. What is accepted as “people’s knowledge” is in fact constructed in the context of planning and is shaped both by locally dominant groups and by project interests reproducing the social relationships that planning systems entail.<sup>54</sup> In sum, the cultural dimension of knowledge implies an understanding of the complex interactions between a number of elements. For example, agricultural activities are not merely technical procedures, but are also attached to a set of ideas deriving from a perception of reality (a theory) and put into action in social reality (praxis).<sup>55</sup> Both theory and praxis are not only the products of cultural context, but they are so intimately interrelated that they become an inseparable, constituent element of social reality.

And yet, the central focus of the IK “enterprise” at present seems to be to document and record indigenous systems so that they become “systematically deposited and stored for use by development practitioners,” not unlike knowledge produced by universities and research institutes.<sup>56</sup> If one considers the aforementioned definitions of IK (“manifold, discontinuous and dispersed”), the idea of centralizing and storing this knowledge appears to be a contradiction in terms. It is the easiest strategy, technically and politically, yet it is at odds with the local and dynamic character of IK and its close link with the lives and changing needs of peoples.<sup>57</sup> For example, the skills and strategies employed by farmers often consist of a “set of improvisational capacities called forth by the needs of the moment.”<sup>58</sup> Recording those practices for use elsewhere, or even in the same location the following year, is therefore very difficult. Furthermore, one must question what is being recorded and documented. Does “local” refer to a particular group of people? And, if so, how is it to be utilized by other groups who must equally possess their own knowledge? The representation of “local knowledge” and the construction of that locality itself depend on “the end to which people perceive their knowledge to be put, whom one is talking to, where and when one is talking to them.”<sup>59</sup>

In sum, the IK “enterprise” approach repeats the same problems of simplification and over-generalization that anthropologists have identified as major limitations in development theory and in science as it is applied to development.<sup>60</sup> This generalization ignores specific and local experience in favor of a generalizable and universal solution.<sup>61</sup> The way development professionals have codified and rejected the cultural context of IK has repeated what has happened in previous scientific encounters with traditional knowledge. As early as the sixteenth century, European travelers acknowledged IK through scholarly and technical appropriation, yet at the same time, also denied it by re-ordering it in cultural schemes which linked it to a Western explanatory system.

## (2) *Validating IK Using the Methods of Western Science*

What is described above reveals how the use of IK in development discourse typically implies that IK has been categorized to follow the parameters of Western development/scientific theories that rely upon an ordered conceptual framework.<sup>62</sup> Few theorists seem to accept the utility of IK in itself, and most writings first propose the validation of IK by means of scientific criteria. By narrowing the parameters of understanding, the imposition of Western categories limits the analysis of indigenous systems.<sup>63</sup> This is demonstrated by the tendency to isolate bits of knowledge and to construct certain aspects of local knowledge as important while excluding or ignoring other areas which do not fall within the selective criteria of Western science. Thus, the resulting theory misrepresents the context in which certain knowledges occur and are experienced. Decontextualization is implicit in placing local knowledge systems under the umbrella concept of “indigenous knowledge.”

The problematic relation between IK and Western science described earlier is again at the core of the critical analysis. This time, it leads to a more radical process of deconstruction.

For Michael Dove, the concept of IK is flawed.<sup>64</sup> The constructed division between indigenous and non-indigenous knowledge is an example of what Michael Foucault calls “dividing practices,”<sup>65</sup> referring to the many ways by which societies objectify the other and privilege the self. In this case, by separating local and extra-local knowledge systems, the concept of IK obscures the existing linkages between the two (see arguments in the section on IK vs. Western science).

But above all, by emphasizing the need to bridge this divide, the concept obscures the possibility that the divide may actually not need to be bridged, but rather negotiated. One of the major premises of the concept of IK is that local communities hold autonomous bodies of knowledge that are unknown to the wider society, and that the study of this knowledge by the wider society is a key to local empowerment and development. Yet knowledge systems are not so much separate and different, as they are competing and contested. The concept of IK glosses over what are differences in self-interest, as differences in knowledge. Several case studies show how different

stakeholders—government agencies, local villagers, and NGOs—exploit and appropriate the notion of IK to legitimize their different interests.<sup>66</sup> These cases also show how their claims about knowledge (e.g., how “ecological degradation” is determined, or which management practices are superior) are linked to the political act of controlling the resources at stake. This leads us to question the way in which the terms “tradition,” “locality,” and “indigenous” are understood.

### Conclusion: Going Beyond the Critique

This brief review of the anthropological literature gives a sense of how the concept of IK has gone through a cycle. IK was marginalized in colonial times and in the decades of modernity’s blind faith in the benefits and superiority of Western science and technology. It has since been rediscovered and subsequently mainstreamed into the dominant development paradigm. Anthropologists first acclaimed the concept of IK, and later critiqued it. Both perspectives are reflected in one 1998 issue of *Current Anthropology*,<sup>67</sup> in which the lead author, Paul Sillitoe, refers to the new emphasis on IK as a “revolution,” while one of the commentators, Carmen Ferradás, calls it “just another self-privileged antinomy.”

This brings us back to the opening questions: can IK help put empowerment and self-reliance of local communities into practice, or is the concept construed so that it runs against the very interests of those it claims to serve?

IK has a great developmental potential. Local peoples possess extensive empirical knowledge about their environments, and they offer interpretations of empirical knowledge that are radically different from the conventional scientific paradigms. There are important lessons to be learned by studying the workings of these indigenous resources management regimes. Conversely, the lack of respect for local knowledge traditions manifested by many Western scientists, underpinned by the assumption that technological superiority implies answers to all difficulties, is a considerable barrier to development. While it is beyond doubt that Western science has contributed to considerable technical advances over the past three centuries, other cultures have impressive technological arrangements, too, and sometimes their ways of managing resources are more appropriate and technologically sustainable.

The utilization of IK for development, however, is ambiguous. Some advocate a romanticized vision of IK as traditional and ecologically sound, projecting onto it their own critiques of modernity, and promoting the conservation of peoples and wisdom according to their own ideals.<sup>68</sup> While IK often facilitates people’s skilful management of their resources, we need to guard against any tendency to idealize it.<sup>69</sup> IK should not be oversimplified and hopes for utilization should not be overly optimistic. The localized relevance of IK is a significant barrier to its incorporation into the development process. Knowledge of all kinds is always useful, but it is useful only to particular peoples. Specific strategies for protecting, systematizing, and disseminating knowledge will benefit different groups of people in different ways.

Yet the most radical critiques must be approached with equal caution. There may be truth to these extreme perspectives at times and in some places.<sup>70</sup> There is indeed a risk that IK may be seen as a new panacea, or will degenerate into a means to obtain resources in the development business. Should this happen, the call for IK will turn into nothing more than an empty slogan before its full potential has been explored. However, the critics do not seem to offer a positive program; they offer critique, but no construction.<sup>71</sup>

Is there a way forward?

One way to look at IK and its use in development practice would be to assume that development should be a two-way process.<sup>72</sup> Western science and technology can help alleviate the poverty of large sections of the world's population. However, development should be on these "others'" own terms, and the use of IK for development should not be restricted to the extraction of information. Nor should IK be applied simply as a countermodel to Western science. It is necessary "to abandon the assumption that we can record and document IK and pass it 'up' to interested parties as technological packages are passed 'down' to beneficiaries."<sup>73</sup> If one starts from these hypotheses, then the central issue of the IK debate is how to ensure meaningful communication between scientists, development workers, and local people, in order to establish what research has to offer. Anthropologists and other social scientists could facilitate the connection, being "betwixt and between" (i.e. coming from the society and culture of scientists but often identifying with or focusing on the needs and goals of those they study).<sup>74</sup>

This is a sensible approach, but it raises at least three sets of issues.

The first issue concerns arguing for the empowerment of the poor with the help of IK, while at the same time assuming the right of scientific knowledge to validate IK.<sup>75</sup> The suggested approach therefore falls prey to the criticism of the dichotomy described earlier.<sup>76</sup> We can assume that the two are independent from each other, and that it is possible to make connections between local people's understanding and practices, and those of outside researchers, development workers, politicians, management consultants, or policymakers. Yet we should still analyze who is most qualified to make that connection, for what purpose, and from what vantage point. Development is a contested domain, with many stakeholders trying to promote different interests and agendas.

A second issue involves the acceptance that understanding another knowledge tradition is not an easy or short-term task. If a culture-sensitive approach towards development cooperation is important, then development agents should take an active part in the life of the communities in which they work.<sup>77</sup> However, it should be recognized that anthropological work of this kind will never be time efficient, and will move at a pace difficult to reconcile with the needs of the development industry.

The third issue is that as long as the Northern states remain globally powerful, development risks remaining largely a one-way process.<sup>78</sup> In proposing a meaningful

communication between anthropologists, bureaucrats, and scientists, aimed at convincing them of the necessity of a full understanding of IK systems, we should not overlook the broader level of the political dimension. But we should bear in mind the limits of anthropology disciplinary competence.

Without attempting to offer a solution to the issues touched upon in the article, I will conclude by suggesting a way to place the issue of adopting or adapting IK for development within a broader perspective—a perspective the majority of the authors reviewed seem to have overlooked or dealt with only marginally. Natural resource management, either based on Western science or on traditional knowledge, or both, must take into account that all activities affect other groups of people with different moral codes and management strategies. In other words, “in an increasingly crowded and interconnected world”<sup>79</sup> we need to evaluate all local solutions in global contexts of social, economic and environmental sustainability. I leave the question open for further reflection.

## NOTES

<sup>1</sup> See for example: Roy Ellen, Peter Parkes, and Alan Bicker, eds., *Indigenous Environmental Knowledge and Its Transformations* (Singapore: Harwood Academic Publishers, 2000); Christoph Antweiler, “Local Knowledge and Local Knowing: An Anthropological Analysis of Contested ‘Cultural Products’ in the Context of Development,” *Anthropos* 93, 4 – 6 (1998); Arun Agrawal, “Indigenous and Scientific Knowledge: Some Critical Comments,” *Indigenous Knowledge and Development Monitor* 3, no. 3 (1995); and Paul Sillitoe, “The Development of Indigenous Knowledge: A New Applied Anthropology,” *Current Anthropology* 39, no. 2 (1998). See also: Manon Osseweijer, “We Wander in Our Ancestors’ Yard: Sea Cucumber Gathering in Aru, Eastern Indonesia,” in Ellen, Parkes, and Bicker; Billie R. DeWalt, “Using Indigenous Knowledge to Improve Agriculture and Natural Resource Management,” *Human Organization* 53, no. 2 (1994).

<sup>2</sup> See for example Ellen, Parkes, and Bicker; Michael D. Warren, L. Jan Slikkerveer and David Brokensha, eds., *The Cultural Dimension of Development: Indigenous Knowledge Systems* (London: Intermediate Technology Publications, 1995), xv; E. Hunn, “What Is Traditional Ecological Knowledge?” in *Traditional Ecological Knowledge: Wisdom for Sustainable Development*, eds. N. Williams and G. Baines (Canberra: Centre for Resource and Environmental Studies, Australian National University, 1993); Agrawal; Mark Hobart, ed., *An Anthropological Critique of Development: The Growth of Ignorance* (London, New York: Routledge, 1993); and Michael R. Dove, “The Life-Cycle of Indigenous Knowledge, and the Case of Natural Rubber Production,” in Ellen, Parkes, and Bicker.

<sup>3</sup> George J. Dei, et al., eds., *Indigenous Knowledge in Global Context: Multiple Readings of Our World* (Toronto: University of Toronto Press, 2000), 6.

<sup>4</sup> Nandini Sundar, “Knowledge in India’s Joint Forest Management Programme,” in Ellen, Parkes, and Bicker, 82. See also Hobart, 13; Antweiler; and I. Scoones and J. Thompson, eds., *Beyond Farmer First* (London: Intermediate Technology Publications, 1994).

<sup>5</sup> Antweiler.

<sup>6</sup> The use of the term “indigenous” began with Robert Chamber’s group at the Institute of Development Studies, University of Sussex, in 1979. A special issue of *IDS Bulletin* featured the term “indigenous technological knowledge,” and it was followed by the publication of *Indigenous Knowledge System and Development* (Brokensha, Warner, and Warren, 1980). “Naming is not easy; it involves the play of perception and the politics of representation” (Pieterse Nederveen, “My Paradigm or Yours? Alternative Development, Post-Development, Reflexive Development,” in *Development and Change*, 29 [January 1998]: 370); it says something about the direction from which we approach the subject and the assumptions we make about it. A number of authors reviewed (in particular Antweiler, DeWalt, Agrawal, Sillitoe, Ellen, Osseweijer) elaborate on the terminology, definitions and concepts related to the kind of knowledge described above. The diversity of and confusion surrounding the terms used in the debate on IK are not a purely technical problem, but also a theoretical and political one. So controversial, in fact, that for Sillitoe the problem of terminology is “an intractable one.”

Space constraints do not allow for a full account of this debate, but it is necessary to at least mention that the expression “indigenous knowledge,” currently adopted by the majority of authors reviewed (i.e., Sillitoe; Brouwer, Warren, Dei et al.; Slikkerveer and Brokensha; and DeWalt), is not uncontested. The main problem is what we mean by “indigenous.” This term is morally and politically charged (see Antweiler). Yet the alternatives—“local,” “traditional,” “folk,” “people’s”—seem to pose even more problems. They evoke rather quaint associations, or fail to convey key qualitative differences in the knowledge.

I have adopted the term more widely used, in the understanding that difference does not equal superiority/inferiority, and “they” are not passive or ignorant (see Sillitoe).

<sup>7</sup> For example, Warren, Slikkerveer, and Brokensha; and DeWalt.

<sup>8</sup> For example, Hobart; Arturo Escobar, *Encountering Development: The Making and Unmaking of the Third World* (Princeton, NJ: Princeton University Press, 1995); Ellen, Parkes, and Bicker.

<sup>9</sup> For example, Ellen, Parkes, and Bicker.

<sup>10</sup> Robert Chambers, A. Pacey, and L.A. Thrupp, eds., *Farmer First: Farmer Innovation and Agricultural Research* (London: Intermediate Technology Publications, 1989); and Warren, Slikkerveer, and Brokensha.

<sup>11</sup> For example, C. Levi-Strauss, *The Savage Mind* (Chicago: University of Chicago Press, 1966).

<sup>12</sup> Sundar.

<sup>13</sup> Sillitoe.

<sup>14</sup> For example, the majority of essays in Hobart.

<sup>15</sup> Dei et al., 8; and Vandana Shiva, “Foreword: Cultural Diversity and the Politics of Knowledge,” in Dei et al.

<sup>16</sup> Michael Foucault, *The Order Of Things: An Archaeology Of The Human Sciences* (New York: Random House, 1970).

<sup>17</sup> Hobart.

<sup>18</sup> *Ibid.*, 1; and Hunn, 13.

<sup>19</sup> Hobart, 1.

<sup>20</sup> See also Katy Gardner and David Lewis, *Anthropology, Development and the Post-Modern Challenge* (London, Sterling, Virginia: Pluto Press, 1996), 3.

<sup>21</sup> See James Ferguson, *The Anti-Politics Machine: "Development, Depoliticization, and Bureaucratic Power in Lesotho"* (Minneapolis: University of Minnesota Press, 1994), 69 - 70: "An academic analysis is of no use to a "development" agency unless it provides a place for the agency to plug itself in, unless it provides a charter for the sort of intervention that the agency is set up to do.... The problem is to find the right kind of problem; the problem that requires the 'solution' that they are there to provide."

<sup>22</sup> Hobart.

<sup>23</sup> DeWalt.

<sup>24</sup> Agrawal.

<sup>25</sup> *Ibid.*, 5.

<sup>26</sup> Antweiler.

<sup>27</sup> *Ibid.*, 24.

<sup>28</sup> *Ibid.*, 30.

<sup>29</sup> See, for example, the vast array of case studies, conceptual papers and other essays collected in Warren, Slikkerveer, and Brokensha.

<sup>30</sup> Antweiler.

<sup>31</sup> *Ibid.*, 6.

<sup>32</sup> DeWalt; and Sillitoe.

<sup>33</sup> *Ibid.*

<sup>34</sup> *Ibid.*

<sup>35</sup> See also Ferguson, 9.

<sup>36</sup> Agrawal.

<sup>37</sup> See also the comparison of three cases in DeWalt, 125-27.

<sup>38</sup> Sillitoe.

<sup>39</sup> Antweiler.

<sup>40</sup> Sillitoe.

<sup>41</sup> Antweiler, 8.

<sup>42</sup> Scoones and Thompson.

<sup>43</sup> Michael Cernea, ed., *Putting People First: Sociological Variables in Rural Development* (Oxford: Oxford University Press for the World Bank, 1991); see also Ciaran O'Faircheallaigh, "Resource Development and Inequality in Indigenous Societies," in *World Development* 26, no. 3 (1998): 381-94.

<sup>44</sup> See, in particular, Ellen, Parkes, and Bicker; and Roy Ellen, "Comments to Paul Sillitoe—The Development of Indigenous Knowledge: A New Applied Anthropology," *Current Anthropology* 39, no. 2 (1998): 223-52.

<sup>45</sup> Ellen, Parkes, and Bicker.

<sup>46</sup> Hobart.

<sup>47</sup> J. Fairhead and M. Leach, "Declaration of Difference," in Scoones and Thompson.

<sup>48</sup> Antweiler, 7.

<sup>49</sup> Sundar.

<sup>50</sup> See also Agrawal.

<sup>51</sup> Fairhead, 193.

<sup>52</sup> Sundar.

<sup>53</sup> Dei et al.

<sup>54</sup> David Mosse, "'Peoples' Knowledge,' Participation and Patronage: Operations and Repre-

sentations in Rural Development,” in *Participation: The New Tyranny*, Bill Cooke and Una Kothari, eds. (New York: Red Books, 2001), 16–35.

<sup>55</sup> Maria A. Salas, “The Technicians Only Believe in Science and Cannot Read the Sky: The Cultural Dimension of Knowledge Conflict in the Andes,” in Scoones and Thompson. pSee also Fairhead and Leach.

<sup>56</sup> Warren, Slikkerveer, and Brokensha, xvii. See also Hunn; Editorial, *Indigenous Knowledge and Development Monitor* 1, no. 3, 1993.

<sup>57</sup> Scoones and Thompson, 19.

<sup>58</sup> Paul Richards, “Cultivation: Knowledge or Performance?” in Hobart, 62.

<sup>59</sup> Sanders, 85–90.

<sup>60</sup> Hobart.

<sup>61</sup> See also Hunn, 13–15.

<sup>62</sup> Hobart, 16.

<sup>63</sup> Fairhead and Leach, 75.

<sup>64</sup> Dove.

<sup>65</sup> Foucault, 208.

<sup>66</sup> See for example Amita Baviskar, “Claims to Knowledge, Claims to Control: Environmental Conflict in the Great Himalayan National Park, India,” in Ellen, Parkes, and Bicker.

<sup>67</sup> *Current Anthropology* 39, no. 2, (1998).

<sup>68</sup> Agrawal.

<sup>69</sup> Sillitoe.

<sup>70</sup> *Ibid.*

<sup>71</sup> See also Nederveen.

<sup>72</sup> Sillitoe.

<sup>73</sup> *Ibid.*, 230.

<sup>74</sup> DeWalt, 128.

<sup>75</sup> Jan Brouwer, “On Indigenous Knowledge and Development,” *Current Anthropology* 39, no. 3 (1998): 351.

<sup>76</sup> See in particular Dove.

<sup>77</sup> Helena Jerman, *The Cultural Process of Development: Some Impressions of Anthropologists Working in Development*, University of Helsinki, Institute of Development Studies, Working Paper 8/98, (1998).

<sup>78</sup> Brouwer .

<sup>79</sup> David A. Cleveland, “Comment on Paul Sillitoe, the Development of Indigenous Knowledge: A New Applied Anthropology,” *Current Anthropology* 39, no. 2 (1998): 227.