LOCAL KNOWLEDGE FOR ENVIRONMENTAL PROTECTION AND CLIMATE CHANGE ADAPTATION IN AFRICA: TOWARDS DECOLONIZING CLIMATE SCIENCE

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Main Research Questions and Policy Issues

Global inequalities today derive in part from the unequal power relations in the way knowledge for development has historically been produced and applied. For a long time, African knowledge systems were undervalued and misperceived as irrational and incompatible with the conventional strategies of development. But the worsening global economic and environmental crises, and widening inequalities between and within nations have exposed flaws in the Western model of development, and gaps in our knowledge of how sustainable development can best be achieved in different cultural contexts. The current pattern of development in Africa looks to many like building a house from the roof down as all the institutions of modernization appear to be suspended over societies that have no firm connection to them. There is now renewed interest in an alternative approach which emphasizes the cultural dimensions of development, and the overlooked potential of indigenous knowledge as perhaps the single largest knowledge resource not yet mobilized in the development enterprise. Marshall Sahlins has rightly emphasized the need for all peoples »to indigenize the forces of global modernity, and turn them to their own ends«, as the real impact of globalization depends largely on the responses developed at the local level.[1] This paper argues that climate science, like other branches of knowledge, needs to be broadened and decolonized; that Africa should search within its own knowledge systems for appropriate ideas and approaches to many of its development challenges. Political independence in Africa should imply greater epistemic freedom that goes beyond Africans running their modern services and institutions merely as gatekeepers of the colonial heritage. The paper focuses on how indigenous knowledge and practice can be enlisted in natural resource management, environmental protection and climate change adaptation.

1 *Marshall Sahlins:* On the Anthropology of Modernity. In: Anthony Hoppers (ed.): Culture and Sustainable Development in the Pacific. Canberra 2000, pp. 44–61, here p. 5; see also *S. N. Eisenstadt*: Multiple Modernities. In: Daedalus 129 (2000), issue 1, pp. 1–29. URL: http://www.jstor.org/stable/20027613 (Accessed: 5. 2. 2021).

Africa contributes least to, but suffers the most from the disastrous consequences of climate change. How can the continent cope better with the worsening threats of flooding, drought and other emergencies that result from extreme weather conditions? Although poverty may sometimes force people to deplete and use natural resources in an unsustainable way, most traditional African societies have deeply entrenched ideas about environmental protection and sustainability because their livelihood depends largely on the land and on the stability of the ecosystem. They believe that land and other forms of nature are sacred, and are held in trust by the present-day users on behalf of dead ancestors and future generations. Chief Sir Nana Ofori-Atta of Ghana once told a colonial official that »land belongs to a large family of which many are dead, a few are living, and countless hosts are yet unborn«.[2] Local communities in different parts of Africa have over the years developed intricate systems of forecasting weather systems in order to prevent and mitigate natural disasters; traditional techniques of soil management, pest and disease control, adopting suitable crop and animal varieties, and other coping strategies that have ensured traditional resilience. The paper recognizes that the unprecedented scale of climate change today may have undermined the reliability of many traditional indicators for predicting the pattern of climate variability, and techniques for preventing and adapting to climate induced natural disasters. There is a need for those who hold and use traditional knowledge to partner more actively with scientists and practitioners in order to co-produce updated knowledge for better climate risk management. This calls for a transdisciplinary and more collaborative approach to research that would ensure that the traditional and modern knowledge systems complement and enrich each other. It also means that indigenous knowledge will need to be documented and preserved in a form that can be used by policy makers and development practitioners for national climate policies, and to compare with and, possibly, apply in other contexts.

I conclude that while Africa stands to gain from global science and international best practices, indigenous knowledge offers a model for rethinking and redirecting the development process, and for enlisting traditional values and institutions in a way that enables and empowers local actors to take part in their own development. Development agents, donors and their consultants, who often assume a knowledge or capacity vacuum in Africa, should instead try to tap into the vital resource of indigenous knowledge for locally appropriate ways to strengthen local climate resilience, and ensure truly sustainable development.

2 *George Benneh:* Towards Sustainable Development: An African Perspective. In: Geografisk Tidsskrift. Danish Journal of Geography 90 (1990), pp. 1–4; *G. Dei:* African Development: the Relevance and Implications of Indigenous Knowledge. In: id. et al. (eds.): Indigenous Knowledge in Global Context. Toronto 2002, pp. 70–86.

Indigenous knowledge and climate change adaptation

Global inequalities today derive in part from the unequal power relations in the way knowledge about development, progress and modernity has historically been produced and applied.[3] For a long time, African knowledge systems were undervalued and misperceived as irrational and incompatible with the conventional strategies of development. But the worsening global economic and environmental crises, and widening inequalities between and within nations have exposed flaws in the Western model of development, and gaps in our knowledge of how sustainable development can best be achieved in different cultural contexts.

As mentioned above, critics liken the current pattern of development in Africa to building a house from the roof down as »all the institutions of modernization appear to be suspended over societies that have no connection to them, and whose indigenous institutions, even when oriented in the right direction, lack the necessary scaffolding to connect them to their modern surrogates«.[4]

As well, globalization is now also widely perceived in Africa as a new version of earlier forms of external domination and exploitation. Its potential economic and welfare benefits are inequitably shared, and appear to bypass or in some respects to adversely affect many developing countries. Now, there is renewed interest in fair globalization processes, and an alternative approach which emphasizes the cultural dimensions of development, and the overlooked potential of indigenous knowledge as, perhaps »the single largest knowledge resource not yet mobilized in the development enterprise«.[5]

In proposing how best to decolonize modernity, Marshall Sahlins has stressed the need for all peoples »to indigenize the forces of global modernity, and turn them to their own ends«, as the real impact of globalization depends largely on the responses developed at the local level.[6]

3 *Henning Melber*: Knowledge Production, Ownership and Power of Definition: Perspectives on and from Sub-Saharan Africa. In: Isa Baud et al. (eds.): Building Development Studies for the New Millennium. London/New York/Shanghai 2019 (= EADI Global Development Series), pp. 265–288.

4 *Akin L. Mabogunje:* A New Paradigm for Urban Development. Proceedings of the World Bank Annual Conference on Development Economies. Washington, D.C. 1992, pp. 191–219.

5 *Michael D. Warren et al.* (eds.): The Cultural Dimension of Development – Indigenous Knowledge Systems. London 1995; *ILO:* World Commission on the Social Dimension of Globalization: A Fair Globalization. Creating Opportunities for All. Geneva 2004.

6 *Marshall Sahlins:* On the Anthropology of Modernity; or, some Triumphs of Culture over Despondency Theory. In: Anthony Hooper (ed.): Culture and Sustainable Development in the Pacific. Canberra 2000, pp. 44–61; *Eisenstadt,* as in fn 1.

The scope of climate science, like other branches of knowledge, needs to be widened and thoroughly decolonized: that Africa should search within its own knowledge systems for appropriate ideas and approaches to many of its development challenges. Political independence in Africa should imply greater epistemic freedom that goes beyond Africans running their modern services and institutions merely as gatekeepers of the colonial heritage. Current research is, rightly, beginning to accord due recognition to the epistemic diversity of the so-called ›pluriverse‹. The paper focuses on how indigenous knowledge and practice can be enlisted in addressing African problems in the general areas of agriculture and natural resource management, environmental protection and climate change adaptation; how development policies and programs should be made to reflect local priorities, and build upon, and strengthen local knowledge, capacity and organization.

Mamadou Dia of the World Bank blames state failure and the development crisis in Africa on the »structural disconnection between formal institutions transplanted from outside and indigenous institutions born of traditional African cultures«.[7] As well, the World Bank in 2004 published an impressive collection of essays aptly titled: ›Indigenous_Knowledge: Local Pathways lo Global Development‹. It is in that sense that this paper sees indigenous knowledge as a model for rethinking and redirecting the development process in Africa, and as a way to involve, enable and empower local actors to take part in their own development. The argument is that Africa's time-honored traditional values, attitudes and institutions should be consciously harnessed and brought to bear on national governance, development practice and public affairs. The Brundtland Report on Environment and Development[8] and the more recent 2007 Intergovernmental Panel on Climate Change acknowledge indigenous knowledge as an invaluable basis for developing climate adaptation and mitigation strategies in various cultural contexts.[9]

I use ›indigenous‹, here, in a general sense to refer to the local, the traditional and the endogenous in Africa, as distinct from the alien ideas and institutions of modernity which came with European colonial rule and Christian missionary influence. Also, the term indigenous knowledge is used to refer to the vast and largely undocumented body of knowledge, wisdom, skills, and expertise which a given community has accumulated through observation and practice over the years, and continues to

7 *Mamadou Dia:* Africa's Management in the 1990s and Beyond-Reconciling Indigenous and Transplanted Institutions. Washington, D.C. 1996.

8 *G. H. Brundtland:* Our Common Future: Report of the Commission on Environment and Development. Oxford/New York 1987. URL: http://un-documents.net/our-common-future.pdf (Accessed: 2. 5. 2021).

9 *A. Kola-Olusanya:* Environmental Conservation: Espousing Indigenous Knowledge Systems as a Model for Caring for the Earth. In: Journal of Educational and Social Research 2 (2012), issue 3, pp. 359–365.

develop as it grapples with the challenges of its environment, with outside ideas, and with constantly changing conditions. It represents the heritage of creative thought and practical everyday life which is passed on orally or through experience from one generation to the next.[10]

To relate the indigenous knowledge movement to the ongoing debates about climate change: Africa contributes least to, but suffers the most from the disastrous consequences of climate change. How can the continent cope better with the worsening threats of flooding, drought and other emergencies that result from extreme weather conditions? I acknowledge that poverty may sometimes force people to deplete and use natural resources in an unsustainable way; but most traditional African societies have deeply entrenched ideas about environmental protection and sustainability because their livelihoods depend largely on the land and on the stability of the ecosystem. They recognize the basic sustainable development principle that people must feel responsible for their environment while exploiting it to meet their needs. They believe that land and other forms of nature are sacred, and are held in trust by the present-day users on behalf of dead ancestors and future generations. Chief Sir Nana Ofori-Atta of Ghana once told a colonial official that »land belongs to a large family of which many are dead, a few are living, and countless hosts are yet unborn«.[11] Local agricultural and pastoralist communities in different parts of Africa have over the years developed intricate systems of forecasting weather systems in order to prevent and mitigate natural disasters. They have acquired sophisticated techniques of soil management, pest and disease control, adopting suitable crop and animal varieties, and other coping strategies that have ensured traditional resilience.[12] This paper recognizes that the unprecedented scale of climate change today may have undermined the reliability of many traditional indicators for predicting the pattern of climate variability, and the techniques for preventing and adapting to climate induced natural disasters. There is, therefore, a need for those who hold and use traditional knowledge to partner more actively with scientists and practitioners in order to co-produce updated knowledge for better climate risk management. This calls for a transdisciplinary and more collaborative approach to research that would allow the traditional and modern knowledge systems to complement and enrich each other. It also means that indigenous knowledge will need to be better documented and preserved in a form

10 *Geoffrey Nwaka:* Using Indigenous Knowledge. In: Michael S. de Vries et al. (eds): Improving Local Government: Outcomes of Comparative Research. New York 2008, pp. 72–87; *C. A. Hoppers*: Indigenous Knowledge and the Integration of Knowledge Systems. Claremont 2002.

11 *Benneh* and *Dei* as in fn 2.

12 *O. C. Ajayi/P. L. Mafongoya:* Indigenous Knowledge Systems and Climate Change Management in Africa. Wageningen 2017; *D. J. Nakashima* et al.: Weathering Uncertainty: Indigenous Knowledge for Climate Change Assessment and Adaptation. Paris 2012.

that can be used by policy makers and development practitioners for national climate policies, and to compare with, and possibly apply in other cultural contexts.

Some General Observations

We need to relate indigenous knowledge not only to the mounting challenges of climate change, but also to the challenges of good governance, national development, poverty alleviation et cetera in Africa. The United Nations considers good governance as perhaps the single most important factor in eradicating poverty and promoting development. Much of the current literature on good governance in Africa has tended to focus attention at the national and state levels, and on such general issues as human rights, civil service reform, electoral and judicial reforms and so on. The major gap in the good governance and development agendas appears to be at the local level where the major issues of poverty reduction, popular participation, and support for an active civil society remain largely under-researched and unaddressed. The poor performance of these states, especially in the 1980s and 1990s has increased the interest in the study of local self-governing and self-organizing capacities, and in indigenous non-state structures of governance (the clan, emirates, village, age grades, credit and mutual aid institutions, etc.) which have sustained the people when states and governments have failed. This approach is particularly needed now, because of widespread disenchantment with excessive centralization that has been brought about by the long period of military dictatorship in Africa. It is vitally important now to integrate indigenous knowledge and traditional institutions into the current system of policy making, governance and development at all levels, especially at the local grassroots level.[13]

The study of indigenous knowledge has important implications for African development discourse in general, and for international development assistance in particular. Since the Earth Summit in Rio in 1992, the debate has intensified over whether it is the rich or the poor countries that should bear primary responsibility for the disastrous consequences of global warming; what mitigation and adaptation strategies should be adopted, and who is due to pay for these; whether or not the pressure on poor developing countries to control their populations and resource use infringes their right to development, and so on. For our purpose here, what is even more important is to give greater priority to the challenge of climate change in development policies and planning in order to avoid or reduce the costly floods,

13 *Claude Ake:* Building on the Indigenous. In: P. Fruhling (ed): Recovery in Africa: Challenges for Development Cooperation in the 90s. Stockholm 1988, pp. 19–22; *A Adedeji/B. Ayo:* People-Centered Democracy in Nigeria. Ibadan 2000.

droughts and other emergencies that occur in Africa as a result of extreme weather conditions. In this regard, indigenous knowledge points to intricate local ideas on forecasting weather systems, traditional ways of coping with changing environments, and the above mentioned techniques of soil management, pest and disease control, and so on. Local communities have mastered nature's early warning signals, and how to predict, prevent or mitigate natural disasters. This rich body of knowledge still has value in contemporary situations, and can provide important insights in the process of climate adaptation. Development agents, donors and the global science community have a lot to learn from local knowledge and practices if development is to be made participatory and sustainable, that is something done with the people, rather than something done for them. Hitherto, donor agencies have tended to engage numerous outside consultants and >experts< who sometimes ignore the knowledge or capacity of the people they seek to assist, instead of seeking to identify and tap into existing local capacities, institutions, skills and practices. Increased emphasis on the indigenous appears to be a more promising way to enhance local ownership, sustainability, and the impact of aid and development partnership. When technical assistance underrates and overlooks local knowledge and expertise, it reinforces the problems of dependency and underdevelopment instead of reinforcing and building upon existing local capacities. Unfortunately, this valuable knowledge resource is threatened by neglect and official prejudice. There is an urgent need to adopt national policies and legislative measures to preserve, protect, document and boost indigenous knowledge rather than undermine it through a misguided approach to modernization.[14]

Conclusion

The paper has taken the position that to be meaningful, African independence should go beyond Africans taking over and manning their modern services and institutions merely as gatekeepers of the colonial heritage. The more fundamental philosophical and epistemological dimensions of independence should be recognized, and actively used to decolonize knowledge about governance and development. We acknowledge that with the increasing tempo of globalization, Africa cannot now opt for an insular and entirely homegrown approach to its development, either. Indeed, very few if any serious scholars consider indigenous knowledge to be an alternative to modern science and technology in today's world. But we must acknowledge that the exclusive use of modern science is in itself not enough for the complex task of achieving sustainable development in diverse cultural and ecological contexts. The real challenge

14 *Martin Khor:* Rethinking Globalization. Critical Issues and Policy Choices. London/New York 2001; *Brundtland,* as in fn 8.

is to follow a pattern of development which recognizes the merits and limitations of both local knowledge and global science, and explores how the two can best complement and enrich each other. Like the Japanese and the rapidly developing countries of Southeast Asia, Africa must aspire to achieve endogenous development which has a distinct African cultural fingerprint.

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