

Chapter 1 : Traditional knowledge - Wikipedia

Positive features of Indigenous Knowledge Management Systems that communities can record and manage their own information, including traditional knowledge.

Search The case for indigenous knowledge systems and knowledge sovereignty part Policy and research recommendations Serious questions that decision-makers need to consider in regard to the role indigenous knowledge plays in designing and implementing development interventions and programmes. Posted by Dr Zeremariam Fre on 11 September in Opinion , The case for indigenous knowledge systems and knowledge sovereignty 62 Views Leave a response This article is part 11 of a series of articles putting forward the case for indigenous knowledge systems IKS and knowledge sovereignty, featuring selected excerpts from the book Knowledge Sovereignty among African Cattle Herders. This [part of the series] € provides an opportunity to ask those tasked with the challenge of designing the future for the region policy makers, NGOs, research institutions, social movements, etc. There are many misperceptions about IK. Development planners and policy makers often do not see it as being rigorous; they see it as simplistic, and fail to see its pluralistic and adaptive nature. On the other hand, conventional development interventions, based on external scientific knowledge, can be short-sighted and politicised, and often lack resilience and the genuine participation of those whose lives are affected. As demonstrated by the practices of the Beni-Amer, the hybridisation of these knowledges must be given consideration when future research programmes and policy initiatives are designed, and the points discussed in the following sections must be taken on board. Repositioning indigenous knowledge and knowledge sovereignty within a global context Rapid environmental, economic, cultural and political changes on a global scale are having negative impacts on indigenous practices. Indigenous knowledge and practice are important drivers of the global economy for example, by influencing the market price of meat , and also contribute to the sustainability of the global environment. Yet IK is still an underused resource in scientific research and development, and its contribution has often meant a loss of traditional ownership and the exploitation of indigenous communities, when their knowledge is used without their consent. Livestock knowledge is still largely untapped, and threats to indigenous knowledge and food sovereignty, which have been outlined earlier in the book, can have a detrimental impact on food security at national, regional and global levels, and lead to wider global economic, social and environmental insecurity and instability. Involving pastoral communities in research and policy design Pastoral indigenous knowledge is transformative and fosters resilient communities, while sustaining natural resources. It is imperative to engage these communities in the design of research. Such engagement is not without its challenges. The promotion of a dialogue between pastoral communities, researchers and policy makers is therefore a progressive move towards dealing with the challenges of climate change adaptation and food insecurity. As well as informal knowledge sharing, formal training should be encouraged, in order to document indigenous knowledge and practice, and the ways in which traditional adaptive strategies can be combined with new technology such as early warning systems EWS. Pastoralism is already being incorporated into some university courses in Africa; for example, Mekelle University in Ethiopia is running a PhD programme on Dryland Ecology and Resource Management including Pastoralism. Over the last 25 years, a number of home-grown pastoralist training and research centres, as well as African-led NGOs, community-based organisations CBOs and networks, have emerged in the region, making a positive contribution by advocating policy changes in support of pastoralist livelihoods. For example, in Kenya some policy makers are introducing more progressive dryland policy and planning. The Ministry of State for Development of Northern Kenya and Other Arid Lands has designed fiscal incentives to attract private-sector investment into pastoral production in the region. Strengthening rights We have a duty to ensure that IK is treated with respect and celebrated, just as it respects and celebrates the diversity of life. This cannot be achieved without protecting the rightful ownership of IK and ensuring the nonexploitation of pastoralist communities, who have called for the protection of their knowledge in accordance with customary law and human rights 4. Safeguarding the diversity and pluralism of IK is imperative if we are to ensure a sustainable use of resources and the preservation of biodiversity in all its

forms. National and international law must ensure that community ownership rights to IK are protected. It is only recently that the intellectual property rights of indigenous communities have been given any kind of legal status, and these are now enshrined in the UN Convention on Biological Diversity CBD. Article 8 j of the CBD states: Text and Annex, which came into force in , and which aims to create equity between providers and users of genetic resources and associated traditional knowledge. At the local level, however, rights are not always recognised and international agreements are not always implemented. Local communities have developed tools to support the implementation of the protocol, such as community protocols, model contractual clauses and voluntary codes of conduct or guidelines 7. Livestock bio-cultural protocols BCPs have been developed by some pastoral communities, such as the Raikas, which document breeds and associated traditional knowledge and practices, and invoke rights under various existing legal frameworks, including the CBD. As pastoral communities are increasingly being deprived of access to grazing areas and other natural resources, their legal rights must be safeguarded in national laws. Where the political climate allows, civil society organisations can help pastoralist groups to access legal channels, and new and existing institutions can monitor and document these processes. Recognising multiple knowledges A book like this one, with an ambition to advance the cause of knowledge sovereignty and sustainability, sees such debates within a wider context than that of choice a context which extends to democratising knowledge and developing new or hybrid knowledges. Ultimately, this leads us to the fundamental question of what types of future are being constructed under the current approaches, and how beneficial they are for the Beni-Amer and other pastoral and farming communities. The world is not a single entity; it is comprised of multiple ways of understanding, being and living. What happens, though, is that this reality is rarely acknowledged and respected; rather it becomes squashed and made to fit into a universe. Michel Serres 11 provides a good gateway to making sense of this idea of multiple worlds. This leads us on to my position on the broader debates of wider significance.

Chapter 2 : What is Indigenous Knowledge Systems | IGI Global

Indigenous knowledge can be called by various names such as indigenous knowledge of knowing [Mapara,], traditional knowledge, rural knowledge as well as ethno science [Altieri,] Indigenous knowledge is therefore generated by a particular society within a.

These sophisticated sets of understandings, interpretations and meanings are part and parcel of a cultural complex that encompasses language, naming and classification systems, resource use practices, ritual, spirituality and worldview. In some communities, traditional knowledge takes on personal and spiritual meanings. Some communities depend on their traditional knowledge for survival. This is particularly true of traditional environmental knowledge, which refers to a "particular form of place-based knowledge of the diversity and interactions among plant and animal species, landforms, watercourses, and other qualities of the biophysical environment in a given place". These accounts use terms like "adaptively acquired knowledge", "socially constructed knowledge," and other terms that emphasize the social aspects of knowledge. A large number of scholarly studies in the naturalistic tradition[clarification needed] demonstrate that traditional knowledge is not a natural category, and may reflect power struggles and relationships for land, resources and social control rather than adherence to a claimed ancestry or heritage. The knowledge of indigenous and local communities is often embedded in a cosmology , and any distinction between "intangible" knowledge and physical things can become blurred. Indigenous peoples often say that "our knowledge is holistic, and cannot be separated from our lands and resources". Traditional knowledge in such cosmologies is inextricably bound to ancestors , and ancestral lands. Chamberlin writes of a Gitksan elder from British Columbia confronted by a government land-claim: Many have clear traditions of custodianship over knowledge, and customary law may guide who may use different kinds of knowledge at particular times and places, and specify obligations that accompany the use of knowledge. From an indigenous perspective, misappropriation and misuse of knowledge may be offensive to traditions, and may have spiritual and physical repercussions in indigenous cosmological systems. Critics of "traditional knowledge", however, see such demands for "respect" as an attempt to prevent unsubstantiated beliefs from being subjected to the same scrutiny as other knowledge-claims. Recently, international attention has turned to intellectual property laws to preserve, protect, and promote traditional knowledge. The reasons for this are complex. In , the Convention on Biological Diversity CBD recognized the value of traditional knowledge in protecting species, ecosystems and landscapes, and incorporated language regulating access to it and its use discussed below. It was soon urged that implementing these provisions would require revision of international intellectual property agreements. This became even more pressing with the adoption of the World Trade Organization Agreement on Trade-Related Aspects of Intellectual Property Rights TRIPs , which established rules for creating and protecting intellectual property that could be interpreted to conflict with the agreements made under the CBD. In response, the states who had ratified the CBD requested the World Intellectual Property Organization WIPO to investigate the relationship between intellectual property rights, biodiversity and traditional knowledge. WIPO began this work with a fact-finding mission in Considering the issues involved with biodiversity and the broader issues in TRIPs involving all forms of cultural expressions, not just those associated with biodiversity â€” including traditional designs, music, songs, stories, etc. The period of the early s to the Millennium was also characterized by the rapid rise in global civil society. The high-level Brundtland Report recommended a change in development policy that allowed for direct community participation and respected local rights and aspirations. Indigenous peoples and others had successfully petitioned the United Nations to establish a Working Group on Indigenous Populations that made two early surveys on treaty rights and land rights. These led to a greater public and governmental recognition of indigenous land and resource rights, and the need to address the issue of collective human rights, as distinct from the individual rights of existing human rights law. The collective human rights of indigenous and local communities has been increasingly recognized â€” such as in the International Labour Organization ILO Convention and the Declaration on the Rights of Indigenous Peoples The Rio Declaration , endorsed by the

presidents and ministers of the majority of the countries of the world, recognized indigenous and local communities as distinct groups with special concerns that should be addressed by states. Initial concern was over the territorial rights and traditional resource rights of these communities. Indigenous peoples soon showed concern for the misappropriation and misuse of their "intangible" knowledge and cultural heritage. Indigenous peoples and local communities have resisted, among other things: Indigenous peoples and local communities have sought to prevent the patenting of traditional knowledge and resources where they have not given express consent. They have sought for greater protection and control over traditional knowledge and resources. Certain communities have also sought to ensure that their traditional knowledge is used equitably - according to restrictions set by their traditions, or requiring benefit sharing for its use according to benefits which they define. Three broad approaches to protect traditional knowledge have been developed. The first emphasizes protecting traditional knowledge as a form of cultural heritage. The second looks at protection of traditional knowledge as a collective human right. Currently, only a few nations offer explicit sui generis protection for traditional knowledge. However, a number of countries are still undecided as to whether law should give traditional knowledge deference. Indigenous peoples have shown ambivalence about the intellectual property approach. Some have been willing to investigate how existing intellectual property mechanisms primarily: Others believe that an intellectual property approach may work, but will require more radical and novel forms of intellectual property law "sui generis rights". Others believe that the intellectual property system uses concepts and terms that are incompatible with traditional cultural concepts, and favors the commercialization of their traditions, which they generally resist. Many have argued that the form of protection should refer to collective human rights to protect their distinct identities, religions and cultural heritage. Public domain[edit] Hansel and Gretel is a fairy tale of Germanic origin, recorded by the Brothers Grimm in Artwork by Arthur Rackham , Literary and artistic works based upon, derived from or inspired by traditional culture or folklore may incorporate new elements or expressions. Hence these works may be "new" works with a living and identifiable creator, or creators. Such contemporary works may include a new interpretation, arrangement, adaptation or collection of pre-existing cultural heritage that is in the public domain. Traditional culture or folklore may also be "repackaged" in digital formats , or restoration and colorization. Contemporary and tradition based expressions and works of traditional culture are generally protected under existing copyright law, a form of intellectual property law, as they are sufficiently original to be regarded as "new" upon publication. Once the intellectual property rights afforded to these new works of traditional knowledge expire, they fall into the public domain. As much of traditional knowledge has never been protected under intellectual property rights, it is argued that they can not be said to have entered any public domain. On this point the Tulalip Tribes of Washington state has commented that " The Article also contains a requirement that Article 27 be reviewed. By , had ratified the Convention and agreed to be bound by its provisions, the largest number of nations to accede to any existing treaty the United States is one of the few countries that has signed, but not ratified, the CBD. In-situ Conservation Each Contracting Party shall, as far as possible and as appropriate: Nevertheless, the provisions regarding Access and Benefit Sharing contained in the Convention on Biological Diversity never achieved consensus and soon the authority over these questions fell back to WIPO. Key players, such as local communities and indigenous peoples, should be recognized by States, and have their sovereignty recognised over the biodiversity of their territories, so that they can continue protecting it. The agreement is now open for ratification, and will come into force when 50 signatories have ratified it. It entered into force on 12 October The chief architects of the Policy are Prof. Prabhat Patnaik and Mr. The policy seeks to put all traditional knowledge into the realm of " knowledge commons ", distinguishing this from the public domain. While codification of TK in digital libraries and sharing the same with patent offices prevents direct misappropriation, it is feared that it may provide an opportunity for private appropriation by making cosmetic improvements to such traditional knowledge that is not readily accessible otherwise. TKDL cannot at the same time be kept confidential and treated as prior art - says R. He argues that the indigenous communities should be educated and empowered to protect their TK through existing legal mechanisms or take patents on the innovations made by them on the TK if they feel so and to negotiate with the potential customers by forming societies or trusts of their own. There is no bar for

patenting inventions, though it may be based on TK. Section 3 p of Indian Patents Act, only prevents patenting of "traditional knowledge or which is an aggregation or duplication of known properties of traditionally known component or components" and not patenting of any inventions based on TK. In the year , Dr. The Bill was introduced for the protection, preservation and promotion of traditional knowledge system in India. The Bill is yet to be discussed in the Parliament. Neither, the Bill was discussed much in the media. Vishnu S Warriar , Dr. Shashi Tharoor has failed to address the real concern of traditional knowledge through his Private Bill. Traditional cultural expressions[edit] The phrase "traditional cultural expressions" is used by the World Intellectual Property Organization to refer to "any form of artistic and literary expression in which traditional culture and knowledge are embodied. They are transmitted from one generation to the next, and include handmade textiles, paintings, stories, legends, ceremonies, music, songs, rhythms and dance.

Chapter 3 : Indigenous Knowledge, Biodiversity Conservation and Development

Knowledge management tools and platforms ranging from content management systems to group collaboration tools, synchronous and asynchronous communication can also help to capture and share indigenous knowledge.

Revised Version - September 12, Introduction Indigenous knowledge and biodiversity are complementary phenomena essential to human development. Global awareness of the crisis concerning the conservation of biodiversity is assured following the United Nations Conference on Environment and Development held in June in Rio de Janeiro. Of equal concern to many world citizens is the uncertain status of the indigenous knowledge that reflects many generations of experience and problem-solving by thousands of ethnic groups across the globe. Very little of this knowledge has been recorded, yet it represents an immensely valuable data base that provides humankind with insights on how numerous communities have interacted with their changing environment including its floral and faunal resources. This presentation provides an overview of recent studies that clearly portray the active role that rural communities in Africa and other parts of the world have played in a generating knowledge based on a sophisticated understanding of their environment, b devising mechanisms to conserve and sustain their natural resources, and c establishing community-based organizations that serve as forums for identifying problems and dealing with them through local-level experimentation, innovation, and exchange of information with other societies. Indigenous knowledge, particularly in the African context, has long been ignored and maligned by outsiders. Today, however, a growing number of African governments and international development agencies are recognizing that local-level knowledge and organizations provide the foundation for participatory approaches to development that are both cost-effective and sustainable. The deliberate maintenance of diversity in domesticated and non-domesticated plants and animals characterizes farming systems across the African continent as well as in most other parts of the world, providing an important opportunity for systematic in situ maintenance of genetic resources. Informal agricultural research and development systems parallel those of national governments, providing another opportunity for national agricultural research and extension services to work with the creative interests and activities of farmers and other rural people. A growing global network of regional and national indigenous knowledge resource centers is involved in documenting the historical and contemporary indigenous knowledge of numerous ethnic groups around the world. Much of this knowledge is at as much risk of being lost as is the case with biodiversity Linden These centers reflect new values that recognize indigenous knowledge as an important national resource. The centers are establishing national indigenous knowledge data bases, giving recognition to their citizens for the knowledge they have created, providing a protective barrier for the intellectual property rights of knowledge that could be exploited economically by the country of discovery, and laying the foundation for development activities that build on and strengthen the existing knowledge and organizational base produced through many generations of creative effort by local communities. Indigenous Knowledge and Biodiversity The importance of and global commitment towards the conservation of biodiversity is no longer questioned. The accelerating rates of loss of floral and faunal species and the projected negative impacts of this loss of germplasm on humankind have been eloquently described by a growing number of prominent biological scientists such as Solbrig, Wilson and Peter, Abelson, Ehrlich, Beattie, Bower, Brockelman, Bunting, Hoyt, and Loesch. Numerous international foundations, development agencies, and international agricultural research centers are also adding the power of their collective concern and resolve to deal with the circumstances leading to the loss of species. Although these publications focus on the immediate and long-term negative biological and economic consequences of the loss of biodiversity, several introduce the complementary importance of cultural diversity that is often reflected in the indigenous knowledge of natural resource management including that of plants and animals. The Global Biodiversity Strategy, for example, includes as one of its ten principles for conserving biodiversity the principle that "Cultural diversity is closely linked to biodiversity. During the past decade progress has been made in understanding the complementarity of cultural diversity and biodiversity. A parallel set of institutions documenting local knowledge about the environment is now being established, indigenous knowledge

resource centers that could play a future role in in situ conservation. Understanding the indigenous management strategies of farmers and other rural persons that foster diversity in domesticated and wild species can help in the establishment of national programs for in situ conservation of germplasm that complement the ex situ programs already in existence Wilkes; Altieri and Merrick; Juma. The role of nineteenth century colonialism and social science in ignoring and sometimes maligning indigenous knowledge has been well documented Warren ; Slikkerveer ; Jackson Studies that depicted local communities and their knowledge as primitive, simple and static are now countered by a rapidly expanding data base generated by both biological and social scientists that describes the complexity and sophistication of many indigenous natural resource management systems. Studies by Berlin et al. The authors represent the academic fields of agriculture, horticulture, botany, zoology, forestry, agroforestry, fisheries, ecology, agroecology, economic botany, wildlife management, aquaculture, animal science, soil science, and hydrology. The fact that so much effort is now being invested in understanding the basis for indigenous natural resource management indicates that the negative attitudes commonly held about indigenous knowledge during the colonial era have begun to change. A review of the published literature during the colonial era does reveal enlightened individuals who understood the value of the indigenous knowledge. Louis Leakey, for example, described in eloquent detail Kikuyu agricultural knowledge and how it provided the basis for many Kikuyu farmers to reject European farming techniques being promoted in Kenya at the turn of this century by British agricultural officers. Indigenous Knowledge and Development International and national development agencies have recognized the value of participatory approaches to decision-making for sustainable approaches to development. During the past decade a rapidly growing set of evidence indicates a strong relationship between indigenous knowledge and sustainable development. Furthermore, this knowledge offers new models for development that are both ecologically and socially sound" Posey Development activities that work with and through indigenous knowledge and organizational structures have several important advantages over projects that operate outside them. Indigenous knowledge provides the basis for grassroots decision-making, much of which takes place at the community level through indigenous organizations and associations where problems are identified and solutions to them are determined. Solution-seeking behavior is based on indigenous creativity leading to experimentation and innovations as well as the appraisal of knowledge and technologies introduced from other societies. Farmers can be excellent conservators of biodiversity. Small-scale farming systems in Sierra Leone, for example, are characterized by diversity, which is valued for its own sake Richards "They often employ their own taxonomy, encourage introgression, select, hybridize, field test, record data and name their varieties" Lamola In Rwanda it was found that farmers "recognise several dozen different potato varieties, which they distinguish according to plant and tuber traits, as well as agronomic and culinary characteristics" Haugerud and Collinson East African farmers "recognise in maize, as in potato cultivars, important differences in taste, texture, storability, marketability, disease and pest resistance, and response to moisture stress. At least nine possible end uses, many of them simultaneously relevant on a single farm, help to determine the maize genotypes east African farmers prefer" Haugerud and Collinson But recently research concerning polycultures has blossomed and some of their benefits are becoming clear" Liebman Polyculture is the norm in farming systems in Africa and other parts of the world, "a traditional strategy to promote diet diversity, income generation, production stability, minimization of risk, reduced insect and disease incidence, efficient use of labor, intensification of production with limited resources and maximization of returns under low levels of technology" Altieri Taking the time and effort to record the indigenous agricultural knowledge for a given ethnic group can provide important guidance for the research agenda for both national and international agricultural research centers Cashman; Warren c; Richards ; Titilola et al. Development agencies are beginning to review the role of indigenous knowledge in the development process at the policy level. Titilola has demonstrated the cost-effectiveness of adding indigenous knowledge components into development projects Lalonde has completed two reports on this topic for the Canadian International Development Agency. The World Bank held a seminar on the role of indigenous knowledge for agricultural development Warren Two influential policy documents have recently been prepared by the U. National Research Council, one focused on the conservation of biodiversity, the other on sustainability issues in

agriculture and natural resource management. Indigenous knowledge is being lost at an unprecedented rate, and its preservation, preferably in data base form, must take place as quickly as possible" National Research Council In Brazil, for example, "the long-term management strategies of the Kayapo, which actually increase biological diversity, offer many fundamental principles that should guide development throughout the humid tropics along a path that is both ecologically and socially sound" Posey The International Society of Ethnobiology has played a key role in formulating the inextricable link between cultural and biological diversity. The most cost-effective way in which indigenous knowledge can be systematically recorded and stored so it can be used to facilitate national development efforts may be through the growing global network of indigenous knowledge resource centers. Seventeen other regional and national centers are in the process of becoming established see appendix. National indigenous knowledge resource centers are organizational structures through which indigenous knowledge is recorded, stored, screened for potential economic uses at the national level, and distributed to other centers in appropriate ways. Innovative technologies discovered and used in one part of the world can often work equally well in similar ecozones in other parts of the world. National centers are in a position to facilitate and control the sharing of indigenous knowledge. This type of information exchange has already begun through multilateral and bilateral donor efforts. Two examples are based on indigenous knowledge from South Asia. The World Bank has disseminated information at the global level on the traditional use of vetiver grass in India for soil and moisture conservation Greenfield. National centers can serve as vehicles to introduce indigenous knowledge components into the formal curricula from primary school through the university as well as in extension training institutes. This can help to augment the declining capacity of the traditional means of transmission of this knowledge due to universal primary education now operating in most newly-independent nations Ruddle; Ruddle and Chesterfield. National indigenous knowledge resource centers are beginning to conduct inventories of knowledge that can be of primary utility in development programs. Examples include indigenous crop pest management systems, farmers perceptions of positive and negative characteristics of crop varieties, and indigenous approaches to the management of soil, water, and biodiversity resources. National centers can also identify and delineate the structure and functions of indigenous organizations that exist in every rural community. Virtually every grassroots organization plays a developmental function within the community. Strengthening the capacity of these existing organizations can greatly facilitate sustainable approaches to development Warren b; Atte As Africa and the rest of the world move into the twenty-first century, it is critical that these issues be addressed at the global, regional, national, and local levels Seidman; Seidman and Anang. The growing number of newsletters focusing on indigenous knowledge and conservation of biodiversity indicates the global interest in cultural and biological diversity see list at the end of the bibliography. If the world is properly to conserve and use genetic resources for both present and future generations, the informal sector of the Third World, that is, the farmers, herbalists, gardeners and pastoralists, must lead us into the next agricultural revolution" Mooney Bibliography Abelson, Philip H. Research and Conservation Efforts in Developing Countries. In Indigenous Knowledge Systems: The Cultural Dimension of Development, D. Warren, David Brokensha, and L. The Scientific Basis of Alternative Agriculture. Freeman and Ludwig N. Possibilities, Constraints and Planning Issues. Studies in Technology and Social Change No. Aumeeruddy, Yildiz Phytopractices: In Indigenous Knowledge Systems: In Resource Management in Amazonia: Indigenous and Folk Strategies, D. Volume 7, Advances in Economic Botany. The New York Botanical Garden. Berlin, Brent Ethnobiological Classification: Jane Genetic Resources Worldwide. Conservation Biology 3 1: Economic Botany 35 1: Biological Journal of the Linnean Society Where do We Go from Here? In Indigenous Knowledge Systems: Implications for Agriculture and International Development, D. Jan Slikkerveer, and S. Some Examples of South Venezuela. International Board for Plant Genetic Resources. Genetic Resources and Local Food Security. Culture, Conservation, and Ecodevelopment, Margery L. Oldfield and Janis B.

Chapter 4 : The case for indigenous knowledge systems and knowledge sovereignty (part 1): Introduction

IGCSE Environmental Management constructive dialogue between people and between indigenous knowledge systems of clash of knowledge Systems on Education.

Living by indigenous knowledge Begin by opening your learning journal for this activity. This activity illustrates four ways in which indigenous people in different parts of the world use their knowledge to live sustainably. Each way is illustrated by one or more case studies from different parts of the world. A spiritual relationship with the land For indigenous people, the land is the source of life – a gift from the creator that nourishes, supports and teaches. Although indigenous peoples vary widely in their customs, culture, and impact on the land, all consider the Earth like a parent and revere it accordingly. She connects them with their past as the home of ancestors, with the present as provider of their material needs, and with the future as the legacy they hold in trust for their children and grandchildren. In this way, indigenouness carries with it a sense of belonging to a place. At the heart of this deep bond is a perception, an awareness, that all of life – mountains, rivers, skies, animals, plants, insects, rocks, people – are inseparably interconnected. Material and spiritual worlds are woven together in one complex web, all living things imbued with a sacred meaning. This living sense of connectedness that grounds indigenous peoples in the soil has all but disappeared among city dwellers – the cause of much modern alienation and despair. The idea that the land can be owned, that it can belong to someone even when left unused, uncared for, or uninhabited, is foreign to indigenous peoples. In the so-called developed world, land is in the hands of private individuals, corporate investors, or the state and can be sold at the will of the owner. For indigenous peoples land is held collectively for the community though competition between communities, and with outsiders, for rights of use, has sometimes led to conflict. According to indigenous law, humankind can never be more than a trustee of the land, with a collective responsibility to preserve it. The predominant Western world view is that nature must be studied, dissected, and mastered and progress measured by the ability to extract secrets and wealth from the Earth. Indigenous people do not consider the land as merely an economic resource. Their ancestral lands are literally the source of life, and their distinct ways of life are developed and defined in relationship to the environment around them. Indigenous people are people of the land. This difference has often led to misunderstandings. Many have assumed that indigenous people have no sense of territory because they do not necessarily physically demarcate their lands. However, indigenous people know the extent of their lands, and they know how the land, water, and other resources need to be shared. They understand only too well that to harm the land is to destroy ourselves, since we are part of the same organism. This involves responsible and moderate use of forests, so that they will continue to be sustaining for future generations. Greed has no place among the Penans. In practice, this means that when they harvest a clump of sago or rattan, they use only the mature stems, and leave the young shoots for harvesting in a few years time. Penans also greatly respect and protect the dipterocarp trees which produce the seeds that the wild boar eat. They do not pollute the rivers because they also know that wild boars eat the plants that grow by the river banks. They also let the boar get their share of the sago trees and protect the acorn-producing trees which the boars also love. The Penans have a great fear of tree-fellers who cut the trees indiscriminately in their jungle because they are afraid that the disturbance will decrease their food supply. The forest seems to be everything to the Penans. They feel an affinity with it and are thankful for its supply of staple foods, building materials, medicines and raw materials for their handicraft. The forest is their world and they live in harmony with it and so guard it tenaciously. Until the last few decades, the Kedayans, another rural people of Brunei, have survived by carefully utilising forest, land and wildlife for their livelihood. Through their day-to-day activities of agriculture and hunting, they utilised and extracted forest resources to produce food and manufacture materials for their consumption and tools for their survival activities, respectively. They have been practising this way of life through many generations, using a complex and highly adaptive system, such as cultivation of hill and swamp rice. To cultivate their staple food, rice, they used different agricultural techniques, both shifting and permanent, depending on the different types of padi such as, tugal, paya, hambur, tanam they were growing. Well into the 20th century, the Kedayans were

traditionally shifting agriculturists, felling, burning and planting hill padi in successive hillsides in succeeding years. An example of areas subjected to this method of rice cultivation is the very rural parts of Temburong, such as Kampong Piasaw-Piasaw. Today, a large part of Temburong is still covered with forest – evidence that the Kedayans have not over-exploited or misused their forest environments. In short, it has been their harmonising and systematic methods of using their environments particularly land and forests that have enabled them to practise similar economic activities through many generations to produce food and manufacture materials, not only for themselves but also to sell the surplus to non-agricultural people in the country. Adapted from Burger, J. Natural remedies and medicines

In many parts of the world, indigenous societies classify soils, climate, plant and animal species and recognise their special characteristics. The Hanunoo people of the Philippines, for example, distinguish plant species in their forest, more than scientists working in the same area. Globally, indigenous peoples use different species of plant to control fertility alone. The Kallaywayas, wandering healers of Bolivia, make use of medicinal herbs; traditional healers in Southeast Asia may employ as many as plants for drugs. Almost all trees and many plants have a place in medicinal lore. Some scientists now believe that indigenous knowledge may help them to discover important new cures for diseases such as AIDS and cancer. Many developed countries realise the potential for indigenous medicine. It is locally available, culturally acceptable, and cheaper than imported drugs. Medicinal Plants in India

Indigenous people work on body and mind together to help cure illness. Medicinal plants are used to treat the spiritual origins of disease as well as the physical symptoms. The vast knowledge of such plants is now beginning to be acknowledged by the rest of the world. A botanical survey of India revealed that tribal peoples of the north-east use plant drugs to cure fevers, bronchitis, blood and skin diseases, eye infections, lung and spleen ulcers, diabetes, and high blood pressure. The Kameng and Lohit peoples in Arunachal Pradesh crush a bulk of *Fritillaria cirrhosa* to a paste to relieve muscle pains. Research has now confirmed the presence of a chemical similar to cocaine in a related *Fritillaria* plant that brings relief to muscular pain. Growing evidence of plant-based contraception is available among many tribal peoples. Worldwide, over plants are employed for contraceptive use. In the Karjat tribal area of Maharashtra, near the west coast of India, a native herb taken twice a year is said to be effective. The Karjat study concludes that traditional health practices can provide up to half of local primary health needs. Enlightened health-care workers are beginning to re-introduce traditional plant remedies where allopathic drugs have become common-place. Properly studied and recorded, this traditional knowledge could revolutionise the world of medicine.

Sustainable resource management

The industrial world is facing an ecological crisis. Yet few industrial economists would admit they could learn from indigenous people. Yet these traditional ways of life have proved highly durable. Hunting and fishing have allowed the Inuit to survive in the Arctic; nomadic pastoralism provides a livelihood for people in the arid Sahelian region of Africa; shifting cultivation has sustained hundreds of distinct cultures in the fragile ecosystem in the Amazon and the forests of South-east Asia. Non-indigenous people have not been able to survive in these extreme conditions without destroying the balance of the ecosystem. The key to this success is sustainability. Indigenous people today use the resources available without depleting them. They use their intimate knowledge of plants, soils, animals, climate, and seasons, not to exploit nature but to co-exist alongside it. This involves careful management, control of population, the use of small quantities but a wide diversity of plants and animals, small surpluses, and minimum wastage. Plants provide food, medicines, pesticides, poisons, building materials; animals provide meat, clothes, string, implements, oil. Indigenous knowledge of nature has ensured the survival of many people in fragile habitats. But it is a knowledge centered not on exploitation but on the harmony of the natural world. All flora and fauna have a place in an ordered universe made up of humankind, nature, and spirits. Indigenous cultures also help to protect the natural world from destruction through religion and rituals. Animals are commonly held in respect and their numbers maintained, often through careful management. Those following the buddhist religion in India, for example, have survived many droughts because they will not kill an animal or a tree. They breed cattle selectively, monitor the feeding of their camels, and live on milk, yogurt and a few cultivated crops. Many people have developed a detailed understanding of animal behaviour. Those living in tropical forests, for example, recognise that where two different ecological zones meet, the hunting is more productive. Many

even grow crops or trees to attract certain animals and increase their numbers. It is the most commonly practised system among indigenous people of Asia and lowland Latin America, and provides them with a high degree of economic independence and cultural integrity. Given sufficient land and low population density, it is a highly successful way of using the forest. The Karen of Thailand practise this system. The economy of the Karen people is based almost exclusively on subsistence dry rice production. An area is cleared of trees, undergrowth is burned, rice planted and later harvested. Each year a new site is chosen and the cycle takes seven years to return to the site first cleared. The system permits regeneration of the forest and thin tropical soils, and does not expose the steep slopes to heavy rains, which would eventually wash away the soil in a fixed-field system. Money has virtually no place in a Karen community. If a village has enough food it is prosperous. If, however, shifting cultivation is unable to provide for the entire needs of a village, the people grow chilli or bamboo shoots, or they may collect and sell honey or other forest produce. Nearly all the income raised is used to buy rice. Sustainable social relationships Social cohesion has been the key to survival for many indigenous cultures. Food gathering and hunting depend on mutual support and co-operation, and disharmony within a part of the group is dangerous to the whole. In many cultures men and women have developed complementary, if not equal, roles; political decisions are arrived at by consensus in many cultures, and other social arrangements that benefit the entire community have often been incorporated into indigenous cultural traditions. Marriage, for example, is an integral part of the social system – political, economic, and spiritual – in many indigenous societies. Marriage can also ensure political stability for the community by regulating exchange between groups, and continuing harmony with the spirit world. For essentially religious reasons, marriage may be prohibited between a man and woman of the same kin group; in other societies it can only take place within the kin group. The notion of marriage as a relationship founded only on the bond of romantic love is rarely, if ever, seen in traditional societies.

Chapter 5 : Indigenous knowledge systems - AR4 WGII Chapter 9: Africa

The case for indigenous knowledge systems and knowledge sovereignty (part 11): Policy and research recommendations Serious questions that decision-makers need to consider in regard to the role indigenous knowledge plays in designing and implementing development interventions and programmes.