Integrated Health Care System: An Approach to Sustainable Development

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INTEGRATED HEALTH CARE SYSTEM: AN APPROACH TO SUSTAINABLE DEVELOPMENT

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Abstract
The Integrated Health Care System is a system that consciously targets, harnesses and reinforces peoples’ links with biodiversity. Peoples’ knowledge of and dependence on biodiversity, especially medicinal plants for health care reasons are positive tools that enable the health, economic as well as the biological and cultural (bio-cultural) diversity conservation needs of people and their areas to be met simultaneously. The results obtained at the ‘Clinique de Manongarivo’ a pilot rural health care center in northwest Madagascar that functioned based on the principle and practice of the Integrated Health Care System are provided in support of the assertion that the Integrated Health Care System can be a viable option of sustainable development.

Key-words: Integrated Health Care System, sustainable development, biological and cultural (bio-cultural) diversity conservation, biodiversity, ‘Clinique de Manongarivo’, Madagascar, rural health care center

Système de Soins Intégrés : une approche pour un développement durable.
Le système de soins intégrés est un système qui cible et renforce les liens entre la population et la biodiversité. La connaissance et la dépendance de la population sur la biodiversité, en particulier les plantes, sont des outils positifs permettant de résoudre les problèmes de santé et

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économiques. Elles peuvent aider non seulement à la conservation de la biodiversité, mais également de la valeur culturelle locale.

Les résultats obtenus dans un centre pilote « clinique de Manongarivo » dans la région nord ouest de Madagascar sont utilisés comme support et comme exemple que le système de soins intégrés pourrait être une option pour un développement durable.

**Mots-clés :** Système de soins de santé intégrés, développement durable, conservation de la diversité biologique et culturelle, biodiversité, « clinique de Manongarivo », Madagascar, centre de soins rural

**Dedication**
This paper is dedicated to the memory of the late Dadilahy Ndronalahy (the great traditional healer of Ambalafary Village, Fokontany d’Analanaantsoa, Commune Rural d’Ankaramibe) whose open-mindedness and generous spirit inspired the turning of the Integrated Health Care System idea into the reality by the setting up of the pilot Integrated Health Care Center – Clinique de Manongarivo - at Ambodisakoana Village. RIP Dadilahy.

**INTRODUCTION**

It was the quest to find out and try to understand the diversity of relationships existing between the people of the Manongarivo area and the other elements of biodiversity around them that turned the dream of the principle of the Integrated Health Care System to a reality – the establishment of a pilot rural health care center that functioned on the principle of the Integrated Health Care System at Ambodisakoana Village.

The Integrated Health Care System (IHCS) is proposed as a possible sustainable development program, in the context of appropriate healthcare provision, biological and cultural (bio-cultural) diversity conservation and poverty alleviation. Humanity needs to find solutions to the many challenges that it faces – providing appropriate healthcare, alleviating poverty, dealing with negative effects of climate change, practicing good governance, eliminating (or minimizing) corruption, etc and all these must be done thru sustainable development.

This paper deals with the principles and methods of functioning as well as the results of the pilot rural health care center (Clinique de Manongarivo) in north-western Madagascar. All this is meant to demonstrate how the IHCS could be the route to sustainable development. Could this be a way to have a sustainable development program of an area and arrive at helping to alleviate poverty of the inhabitants?

**The Integrated Health Care System**

The Integrated Health Care System (IHCS) is a system that consciously targets and harnesses peoples’ links with biodiversity (Nature) for health care reasons as a positive tool. This enables not only the health care needs of people to be met appropriately but also the economic as well as the biological and cultural diversity conservation needs of people and their area simultaneously.
It is a holistic approach to health care provision that considers health as the basis of all things and as such:
Acknowledges, appreciates, respects and embraces cultural, biological, economic and technological diversities as well as the diversity of human capabilities and harnesses these to function in a **complementary** manner to meet its goal of **HEALTH FOR ALL** and **HEALTH OF ALL**

**PHILOSOPHY OF THE IHCS**
The principles of conservation and that of the relay team together form the cornerstone of the IHCS. Let me briefly explain this.

**Conservation:** This is the management of the human use of the biosphere (the part of the earth’s surface and atmosphere inhabited by living things) so that it may yield the greatest sustainable benefit to current generations while maintaining its potential to meet the needs and aspirations of future generations (IUCN, 1994).

At the heart of conservation is manage to arrive at ‘**sustain use.**’ This means using a resource in a way that it (the resource) meets the needs and aspirations of the current user without compromising the ability of the resource to meet the needs and aspirations of other users.
Conservation is progressive, dynamic, tolerates and accepts change and use but is against abuse, overexploitation and misuse of resources. Conservation considers both the present and future generations of users.

**Relay Team:** This entails a group of **individuals with diverse capabilities** (different levels of competence) **coming together as one and complementing each other** to compete for a common prize. Each individual carries out a specific task (according to his/her capability and competence); each task being a part of the whole and which when accomplished is meant to complement what the others do. To be successful, team members have to work hard together at perfecting their abilities to complement each other (eg; pass on the baton during a relay race).

**Principles of the Relay Team**
The members of a relay team are always guided by the principle (spirit) of the relay team:

- **respect for each other as a person and his/her capabilities,**
- **total confidence and trust in the other’s ability to do his/her best for the good of the team,**
- **each team member takes up his/her responsibility to do his/her best,**
- **each team member is independent but at the same time dependent on the others for his/her success,**
- **individual successes together form the success of the team.**

The strategy of the relay team is to harness and manage the diverse strengths of individuals to make sure that the team succeeds in attaining its goal.
As we can see, **conservation emphasizes on the sustainable use (not abuse)** of the diverse resources at one’s disposal thru management while the success of the relay team depends on the ability to harness and manage the strengths in individual differences and diversities to function in a complementary manner.

**The principle of the IHCS is thus, harness and manage the diversity of resources (human and material) available to complement each other and use these in a sustainable manner.**
The diverse local resources (material and human) must first be harnessed and used to the best of one’s abilities before calling on external resources to come in to complement these. **Learning to be independent and at the same time dependent is the key here.** Local resources are not to be ‘blindly replaced with so called alternatives’ External resources must come in to complement local competence as well as material resources. Trying to replace local resources rather than complementing them smacks of disrespect and is not sustainable as it tends to ‘**turn people (countries) into beggars**’ to the detriment of all.

**RESOURCES of the IHCS**
Under the IHCS, resources of the different medical systems (traditional and allopathic) of an area are combined. The traditional medical practitioner (TMP) and the allopathic medical practitioner (AMP) work together, complementing each other as they use local biodiversity (medicinal plants etc.), modern medicines (pharmaceutical products etc.) and technologies in the prevention and/or treatment of diseases. These (TMP & AMP) then join forces with other specialists – ethno-botanists/botanists, biochemists, chemists, pharmacologists, pharmacists etc. – to complete the multi-disciplined team required to carry out the various activities necessary for the attainment of the IHCS goal.

**The IHCS goal**
Health for all and health of all: healthy people, healthy other elements of biodiversity, healthy environment, healthy culture, healthy economy.

**Clinique de Manongarivo**
The ‘Clinique de Manongarivo,’ is a pilot rural health care center that functioned on the principle of the IHCS in northwest Madagascar. This part of my presentation is meant to demonstrate the validity and practicability of the IHCS as a viable sustainable development option.

Established in 1993, the ‘Clinique de Manongarivo’ in Ambodisakoana Village functioned with a multi-disciplined team divided into a Field Team (made up of traditional medical practitioner (TMP), the allopathic medical practitioner (AMP), ethno-botanists and local helpers) and a Laboratory Team (comprised of biochemists, chemists and pharmacologists). The team was charged to provide primary health care to the people of the Manongarivo area and arrive at the conservation of local biological and cultural diversity at the same time. A combination of unfortunate circumstances resulted in the lack of funds and led to the suspension of the Clinic’s activities at the end of 1998. Activities resumed in 2001 but came to a halt again in 2006.

**METHOD OF WORKING**
The team worked in a relay fashion with each other and with the local community.

**The Field Team**
The AMP and the TMP together received patients during consultations and examinations at the Clinic. They shared views on diagnoses after examination and then decided on the appropriate treatment. All information concerning the patient (clinical examination, investigation and treatment…) were noted in individual medical records (2 copies; one of which was kept at the Clinic, the other sent to the Laboratory Team). This allowed for easy follow-up of treatments and disease evolution of each patient. The follow-up was done either
at the Clinic with the patient returning to the Clinic or at patients’ home with AMP and TMP visiting.

Initially, priority was given to choosing traditional medicine (medicinal plants) with the TMP providing the prescription. The AMP prescribed a pharmaceutical product only when there was no local remedy for the case in hand. This was to enable the Clinic be able to maximize benefits from the use of local resources before bringing in external resources to complement the local ones.

Biodiversity prescribed was prepared in the presence of the patient (and/or the accompanying person). This was meant to teach these people how to prepare the treatment correctly should the need arise. It was also meant to help limit and finally remove the dangers associated with the misuse of medicinal plants.

The issue of ‘not knowing the right dose to use’ is often used to discredit traditional medicine, albeit incorrectly. The teaching at the Clinic was meant to help correct this. The patient (and/or accompanying person) was taught to understand that the quantities of the medicine, the frequency of take as well as the duration of treatment are very important in every treatment. They were therefore advised and encouraged to apply this always, irrespective of the treatment type. Using the correct dose would mean avoiding waste and eliminating the dangers thru the use of too much (excess) or too little (insufficient) material. This then results in the sustainable use of the resource.

Patients whose treatments required the prescription of pharmaceutical products paid for the cost of purchasing these medicines from the Clinic’s pharmacy.

Relay
Data from the Clinic, as per the copied medical records (information on the biodiversity provided by the TMP and used in the Clinic, the medical result noted during treatment and follow-up) were sent to the Laboratory Team for further investigation.

The Laboratory Team
The Laboratory Team sought to authenticate the empirical use of the medicinal plants, standardize the known effective remedies and provide information that enabled the Field Team and the community to arrive at maximizing rather than wasting the benefits to be gained by the sustainable use of local biodiversity.
To this effect, research was carried out to select the most effective medicinal plant(s) for a particular disease and the most effective part of the plant to be used. Similarly, investigation on secondary effects, toxicity and the improvement of the method of preparation of the medicinal plant(s) were undertaken. The laboratory results were returned thru the Field Team to the community to help optimize efficiency and conservation. Plants recommended for use in the Clinic had to be: plants already known and used by the community and/or the TMP, effective, less toxic and with wide distribution. Effective rare plants and plants with access difficulty were brought into cultivation in the Clinics’ medicinal plants garden.

RESULTS
Activities carried out by the Teams (Field & Laboratory) resulted in the practice of three treatment types at the Clinic. Diseases were treated by:

- Biodiversity only
- Pharmaceutical product(s) only
The combination of biodiversity and pharmaceutical product(s) (Quansah, 2001)

Of the 40 different diseases encountered at the Clinic, 32 were effectively treated strictly using local medicinal plants only; two using pharmaceutical products only and the remaining six were treated using a combination of biodiversity and pharmaceutical products.

**Examples of Diseases or medical cases treated using biodiversity only**

- Abscess
- Athlete’s foot
- Burns
- Measles
- Scabies
- Wounds
- Lock-jaw (tetanus)

- Constipation
- Diarrhea
- Dysentery
- Intestinal worms
- Stomach ulcer
- Stomach ache

- Tooth-ache
- Dysuria
- Fatigue (general)
- Hypertension
- Motion sickness
- Fever

- Jaundice
- Asthma
- Cough
- Dysmenorrhea
- Gonorrhea
- Miscarriage

**Examples of Diseases or medical cases treated with pharmaceutical products only**

- Acute bronchopneumonia
- Typhus fever syndrome

**Examples of Diseases or medical cases treated by combining biodiversity and pharmaceutical products**

- Cough (with acute respiratory tract infection)
- Syphilis
- Malaria
- Wound (with complications)

**Sustainable use of biodiversity (medicinal plants)**

The complementary functioning of the personnel of the IHCS Clinic during its period of operation saw the selection of appropriate plants and plant parts for the effective treatment of various cases encountered in the area. For example, laboratory investigations led to the use of the leaves of a *Burasaia sp.* for the treatment of fever in the Clinic instead of using the roots of this plant as practiced by the TMP and the community. Also, the oil extracted from the fruits of a *Mauloutchia sp.* was used to treat toothache and sore gums in place of using the bark (Quansah, 2001).

A medicinal plant’s garden established on the premises of the Clinic has 30 different species of medicinal plants growing in it. The plants from the garden were used in the Clinic in order to take undue pressure off some of the plants of the area. This is in line with the sustainable resource use principle of the IHCS.

**Reforesting with plants used by people**

The medicinal plants garden can be regarded as a reforested area. This approach to reforestation can be extended to other degraded localities where the human-plant relationship in areas such as energy, food, shelter etc can be harnessed and reinforced by undertaking reforestation programs with the plants used by the people. These reforested areas can be managed with plants harvested and used by communities. The use could be direct household use or sold to raise funds for other community development programs.

This is in line with the fact that no one can prevent and/or stop human beings from using other elements of biodiversity. It is better to reinforce our links with Nature thru the use of biodiversity rather than to severing the links. Reinforcing the links, I believe will provide
people with a more tangible reason to want to take up their responsibilities to help save biodiversity (Quansah, 1995).

The Cost-Effectiveness of the IHCS
Affordability, accessibility, availability, cultural acceptability and personal responsibility, the pillars that make any service-providing-system (more so that of health care service) effective and efficient are enshrined in the functioning of the IHCS.

With its multi-disciplined team and combined resources, the IHCS becomes a system that minimizes waste while maximizing benefits. The provision of health care services, under the IHCS is economically affordable, accessible, available, culturally acceptable, effective and efficient.

Economic gains
By reinforcing the use of local medicinal plants, which is often free (at worst five to 10 times less expensive than pharmaceutical products) the Clinic enabled patients to cut down on their health care costs. People saved money by using local biodiversity for the diseases that could be taken care of by biodiversity rather than relying solely on pharmaceutical products for all their diseases. For example: people saved around US$5 for using ginger to take care of their motion (travel) sickness; US$7 for using a Croton sp. in treating diarrhea; up to US$20 in using an Erythroxylum sp. to take care of their asthma and around US$35 for using a Mauloutchia sp. for herpes.

This made it possible for them to afford the cost of pharmaceutical products needed for the other disease(s) that had no effective local biodiversity as remedy. The money saved was also used to help meet other family needs, such as paying for the cost of a child’s education.

Acceptability, Responsibility, Biological and Cultural Diversity
Conservation gains
The use of medicinal plants (biodiversity) is a cultural practice. Any system therefore that strengthens peoples’ links with biodiversity (Nature) easily becomes accepted by people as these are able to identify with it; hence the acceptance of the IHCS in the Manongarivo area. As the IHCS reinforces the life-saving value of biodiversity thru their uses for health reasons, it makes it easier to evoke peoples’ willingness to take up their responsibilities to help conserve local biodiversity. They depend on local biodiversity for survival and so felt obliged to save biodiversity. Arriving at the continued and sustainable use of medicinal plants meant saving the aspect of the culture from disappearing.

Preventive Activities
‘Prevention is better than cure’ so goes the adage. As a result of this, vaccination, family planning, health education as well as discussions on sustainable resource use and management were other activities carried out at the Clinic in order to help ensure the general well-being of the people and the durability of the activities carried out thru the IHCS.

The third option to health care provision
Currently there are two options to health care service provision – the Allopathic (Biomedicine or Western) Medical System & the Traditional (Complementary / Alternative) Medical System.
The third option is: the Integrated Health Care System.


**Choices**
The availability of choices (options) and the ability to make a choice is a fundamental human right. Patients and their families as well as health care service providers must be allowed to have this third option.

**Conclusion**
Finding successful way(s) to overcome the diversity of global challenges more effectively and efficiently, would require a re-think and a re-act of policies and activities founded on honesty and the will to act.

Adapting the IHCS will not only help solve health care problems of countries. It will also help meet the economic as well as biological and cultural diversity conservation needs.

The pilot IHCS Clinic in Ambodisakoana Village resulted not only in making appropriate health care services available to the people, it also brought in economic, biological and cultural diversity conservation gains.

This is sustainable development in action.

**ACKNOWLEDGEMENTS**
The moral, financial and material supports of diverse individuals and institutions made it possible for the dream of an Integrated Health Care System program to become a reality in the Manongarivo area. I’m grateful to all. The greatest appreciation, however, go to the people of the Manongarivo area whose dedication to and acceptance of the program and its members enabled the successful pilot stage to be attained.