Possible Application of Space Technology including GNSS in a healthcare model in Nepal

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Purpose

Sensitizing about the Health needs people in special situations

Inquiring the possibility of using technology to address these needs
Nepal

- Landlocked between two big countries
- One of the poorest countries in the world with an HDI of only 0.548.
- Mountains cover most of the land
- Rural areas lack basic necessities of life including healthcare
- Lack of roads and
- Prone to natural disasters like landslides

*Human Development Report, UNDP, 2015*
Healthcare realities

- Doctor: patient ratio 7: 10,000
- Health care personnel centralized in the capital
  (or migrated to greener pastures)
Sparsely populated Remote villages in High mountains Have other dimensions of healthcare issues
Larger areas of lands are abandoned every year
Schools are getting fewer children
Lesser number of people are getting married
Exodus of population
Healthcare scenario in remote Nepal:

- Difficult geographical terrain
- Demography
  - Villages of 200-300 people
- Present health care system with primary health care centers, health posts and sub-health posts are insufficient
- Health centers with one or no medical personnel and very few facilities
- Long travel time
Are the native people being uprooted from their land?

What does health-rights mean for the people in these remote areas?
Overcoming these realities to provide health service needs

- Political will
- Lots of effort
- Expenditure
Health Economics is not Simple Arithmetic

Democracy should be more than tyranny of majority
Why are these sparsely populated areas neglected?

Small ‘vote bank’ for politicians
Small sample size for researchers
Insignificant benefit for public health experts
Not attractive to for-profit health industries
And…. Of course that Arithmetic of apathy
A resilient healthcare model for sparsely populated mountainous regions of Nepal
• Mobile team of Health workers including Doctors
• “Demystification of Medicine” : training locals to take care of the sick
• Community managed health cooperatives with strong micro-health-insurance component
and...

ICT4H
Tele health: wireless network
Exchange of medical information

Grassroot healthworker in village

Central Hospital

UN/Nepal Workshop on the Applications of Global Navigation Satellite Systems
Telemedicine:

One of the few efficient and effective way to provide healthcare services in the rural areas.
Benefits:

- Access to basic medical and surgical care services in remote and rural areas
- Availability of specialist consultation – national and international
- Continuing Medical Education for healthcare workers stationed in remote areas
- Better retention of Doctors and HWs
- Data management
- Research
Other appropriate technology:

DRONES

Along with its human twin

‘POSTMEN’
Medical DRONE

- Numerous applications in medical services in mountainous regions
- However, its operation is challenging in terms of
  - technology,
  - regulations and
  - safety.
GNSS

- Enabling technology for smooth operation of DRONE
  - during the en-route and
  - precise landing phase.
For Regulation and Safety

Coordination is required among

- Implementing organization
- ‘Line Ministry’ (MoHP)
- Civil Aviation Authority
- Home Ministry and
- Ministry of Defense
That demands

Freedom from the
- Fear of the unknown
- Red Tapism
- Bureaucratic hurdles
GNSS and Tele-health integration

- Tele-epidemiology
- Predict disease pattern e.g. seasonal infectious diseases
  - Monitoring chronic diseases
  - Recording medical demography
Identified Stakeholders

- CORS Network Authority
- Medical Doctors
- GIS R&D Team
- Telecommunication Authority
- Civil Aviation Authority
- Health Ministry
- Patients
- Drone Operator
THANK YOU!