THEMATIC SESSION:
ICT FOR DISASTER RISK REDUCTION

Experience and Perspective:

Use of ICT for Disaster Risk Management in Samoa

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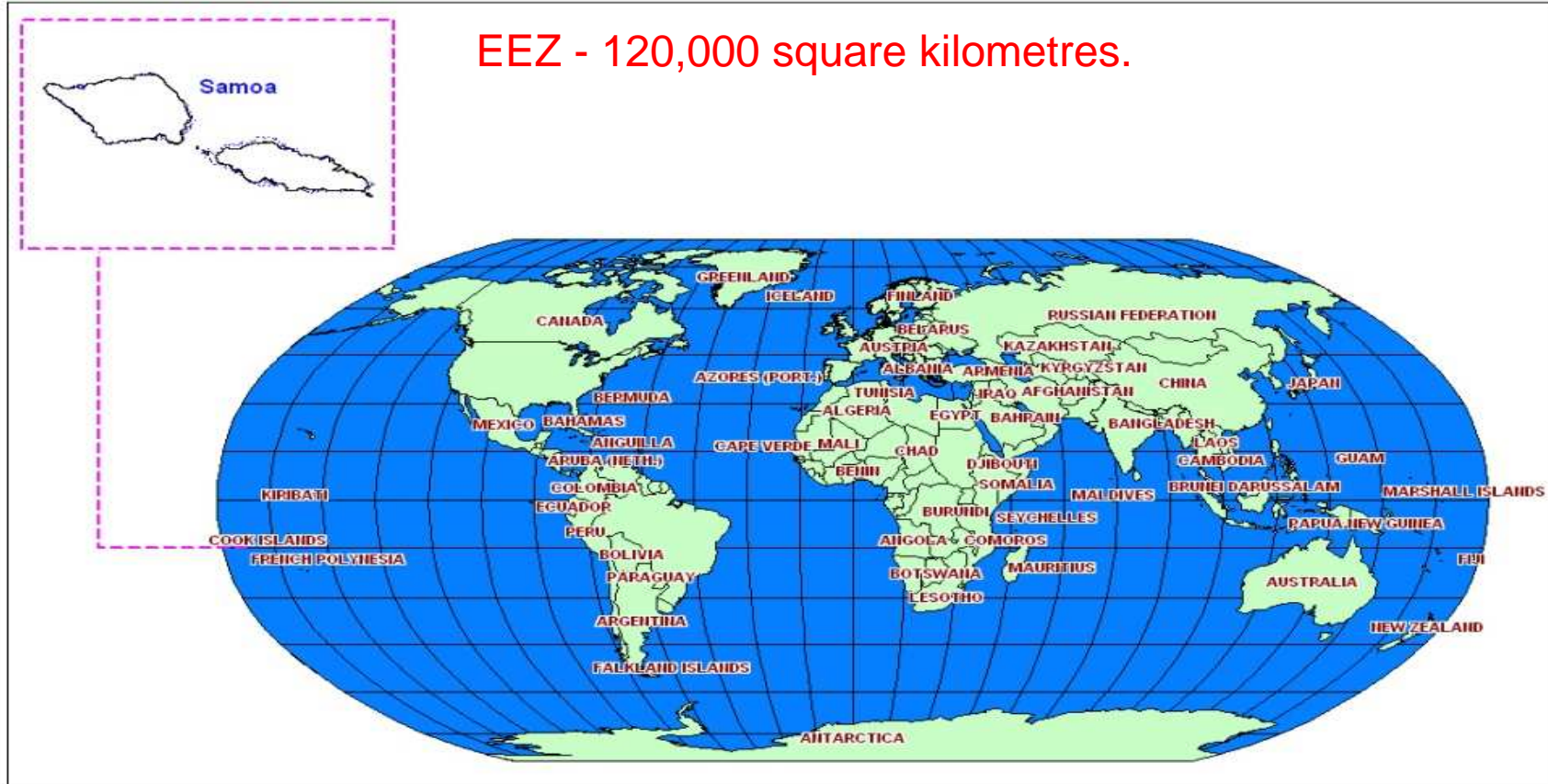
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Introduction

- Country profile
- ICT applications in DRM
- Disaster Risk Management and ICT National Frameworks
- Implementation challenges
- Capacity building and gaps
- Examples on use of ICT for DRM in Samoa

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Country Profile

EEZ - 120,000 square kilometres.

Country Profile

- Number of islands: 4 inhabited & 6 uninhabited (10 islands)
- Landforms: volcanic origin
- Total land mass of 10 islands: 2935km^2
- Climate: tropical climate with a rainy season from October to March, and a dry season from April to September.
- Population: 2006 Census 180,741
- Economy:
  - small and developing economy, with a GDP of around US $537 million as at September 2008;
  - economy base - agriculture, fisheries, forestry and tourism.
  - main exports - fish and agricultural products, with steady growth in tourism sector over the past few years.

Country Profile

- Communal society
- Traditional system of community leadership whereby Matai (chief) plays a large role at national, community and village levels
- Official language: Samoan & English
- Strong religious ties where church plays a major role
- Diet – tropical food
- Transportation
  - Domestic (including inter-island) – vehicles, inter island ferry
  - International – flights to all parts of the world through NZ, Australia, Fiji, USA

Country Profile

- ICTs available in Samoa
  - TV stations (6 channels)
  - Radio stations (8 stations: 1 AM & 7 FM)
  - Home/offices fixed lines
  - Mobile services – 2 GSM networks operating in the country improving coverage to 95% (voice, SMS, images, internet, email)
  - Facsimile
  - Internet/email (offices, business, some homes, 11 community telecenters)
  - Satellite telephones
  - Amateur radio - VHF, UHF & HF
  - Meteorological satellite based warning dissemination equipment such as EMWIN
  - Video teleconferencing
  - Public pay phones
  - Radio paging
  - GIS
  - Remote sensing

Country Profile

- ICT Infrastructure
  - Digital exchanges (1 Main & 5 remote subscriber switches)
  - Rural telecommunications network using digital radio multiple access subscriber system (DRMASS)
  - IRT2000 radio system – serviced some areas of the country
  - Digital microwave system interconnects remote exchanges and main gateway
  - ASH Submarine Cable
  - Standard A satellite earth station operating through 174 degree Intelsat Satellite
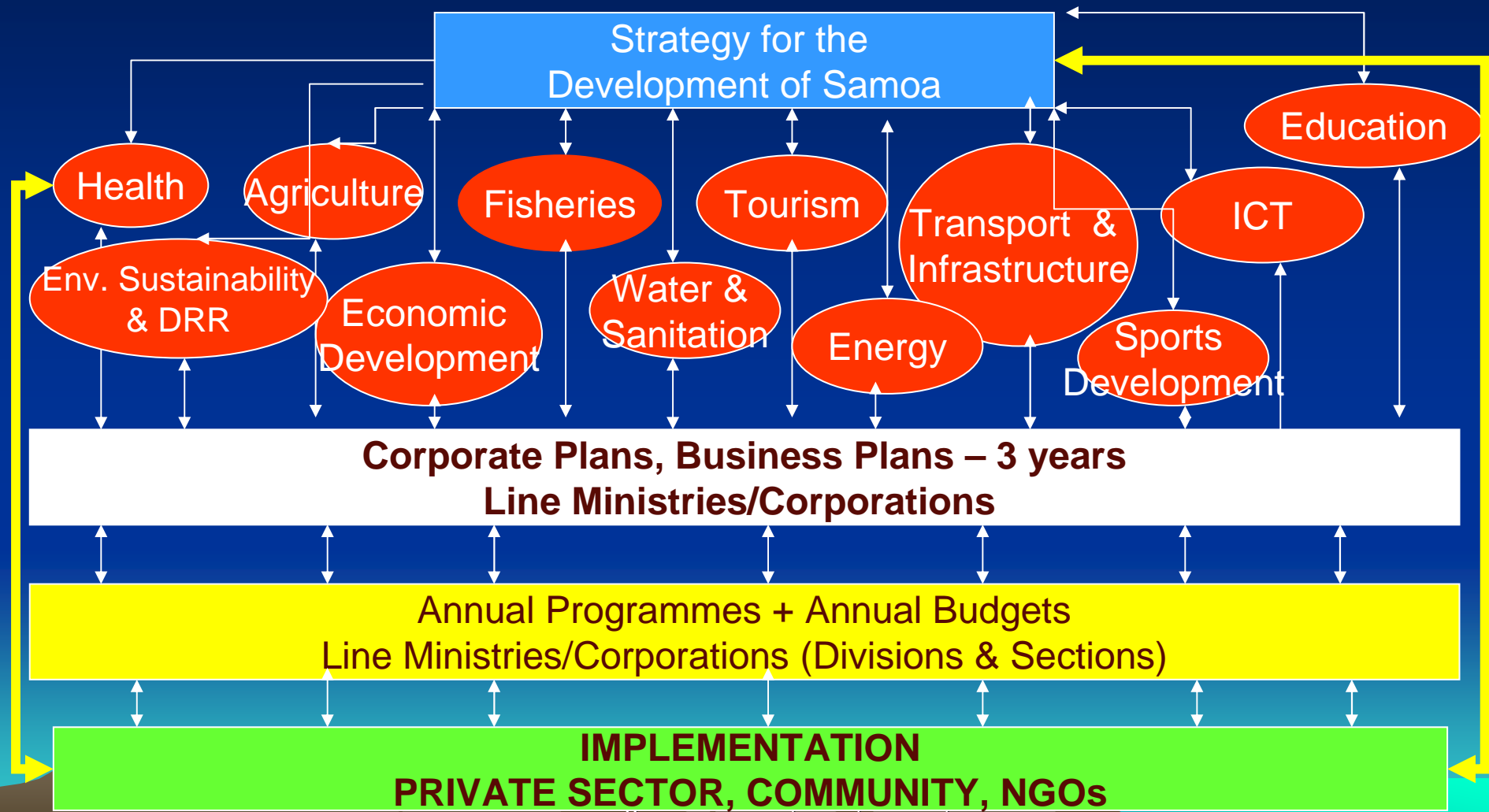 - Wireless local loop (WLL)
  - Network for public card-payphones

ICT applications in DRM

- Infrastructural development planning purpose – location of power plants, water catchments/reservoirs, roads, etc….
- Disaster management planning – location of depots, roads, etc….to ease response and relief planning and coordination
- Early warning dissemination – mobile telephones, fixed lines, fax, email, internet, radio, television, EMWIN
- Information sharing – email/internet
- Public awareness – email/internet/TV/radio
- Response & recovery planning and coordination – radios, mobiles, fixed lines
- Updates on disaster response – email/internet - website

Mainstreaming DRM into national development planning & implementation

Strategy for the Development of Samoa

Health | Agriculture | Fisheries | Tourism | Transport & Infrastructure | ICT | Education

Env. Sustainability & DRR | Economic Development | Water & Sanitation | Energy | Sports Development

Corporate Plans, Business Plans – 3 years
Line Ministries/Corporations

Annual Programmes + Annual Budgets
Line Ministries/Corporations (Divisions & Sections)

IMPLEMENTATION
PRIVATE SECTOR, COMMUNITY, NGOs

DRM & ICT National Frameworks

- DRM
  - Disaster and Emergency Management Act 2007
  - National Disaster Management Plan
  - National Hazard Plans – cyclones, tsunamis, fire, influenza pandemic
  - Response Agency Plans
  - Village Disaster Management plans
  - Schools Disaster Management Plans
  - Other organizations
- Require all response agencies, villages, schools, private sector, NGOs and every individual to prepare to respond and recovery from disasters

DRM & ICT National Frameworks

- DRM Framework – focuses on natural, technological and biological hazards

- Identifies the gaps in terms of resources and capacities to strengthen national and community resilience to disasters

- Spell out functions, responsibilities & roles at all levels

- DRM requirements at all levels

- Gap/action that needs following up: Professional development plan

DRM & ICT National Frameworks

- ICT
  - National Telecommunications Act – service providers and licensing system
  - National Policies:
    - Communication sector policy
    - Broadcasting policy
    - International telecommunication services markets
    - International telecommunication and gateway
    - Internet and email policy (under development)
    - Anti spam
  - National communication committee
- Gap:
  - protection of ICT infrastructure against disasters
  - Backup
  - Non-existence of formal arrangements for alternative communication with outside sources/partners/countries

DRM & ICT National Frameworks

- In the process of developing National Emergency Telecommunication Plan
  - Risk reduction measures to ensure that ICT infrastructure are protected from harm
  - Service continuity - arrangements for backup and recovery
  - Responsibilities before, during and after

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Implementation challenges

- Very high cost of ICTs and access to ICTs
- Access to communication technologies for rural and remote areas
- Language – most websites are in English, only a few use both languages
- Complexity of software and hardware
- Limited capacity – in using software/hardware, data analysis/modeling, interpretation, etc…
- Limited/lack of information/non-existent of information
- Errors in data/information
- Lack of coordination in data collection, storage, and use
- Resources

Capacity building and gaps

- Workshop: first two modules of the academy of ICT Essentials fro Government Leaders focusing on
  - Linkage between ICT applications and meaningful development; and
  - ICT for development policy, process and governance
- Village DRM workshops – train village community leaders on how to effectively use mobile such as checking text messages
- Community centers (internet, fax, email, photographing, fixed lines) – training on use of these ICTs for women's committee in charge of the center & computer trainings for interested individuals
- On-going training on use of all ICTs for response done on a weekly basis
- Other on-going training on GIS, MapInfo, LINUX, etc….

Capacity building and gaps

- Gaps
  - Websites need to be available in Samoan language
  - Web addresses – where to get the information from
  - Need to be user friendly – easy to download, quick searches, speed
  - Coverage for amateur radios (planning to put in more repeaters)
  - Updating information on websites
  - On-going training for village disaster risk management committees
    - Use of ICTs in tele-centers
  - Specialized training for disaster practitioners such MapInfo, GIS, etc…

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Examples on use of ICT for DRM in Samoa

TSUNAMI EARLY WARNING SYSTEM:

- Receive tsunami bulletins from the Pacific Tsunami Warning Center in Hawaii….
  - Emergency Management Weather Information Network (EMWIN)
  - Fax (Weather Section)
  - Mobile (DMO)
  - Email (DMO)
- Disseminate tsunami information to the public:
  - SMS messages (messages are pre-programmed into mobile system)
  - Radio
  - Television
  - Email
  - Amateur radios to communicate with response agencies
- Warning signals (modern and traditional signals but)
  - Fast and continuous sound of church and school bells (5 minutes)
  - sirens – continuous until tsunami warning is cancelled (fire stations, wharves, airport)
  - Boats/ferry at ports
  - word of mouth

Examples on use of ICT for DRM in Samoa

INFORMATION SHARING AND AWARENESS:

- TV/radio hazard spots
- Webpage dedicated to DRM
- Wide circulated newspaper in Samoa – dedicated page every Sunday on environmental issues including DRM

RESPONSE/RELIEF COORDINATION

- Mobile emergency communication trailer
  - Amateur radios (VHF, UHF, HF)
  - Fixed lines using wireless
  - Satellite telephones
  - Fax
  - Internet/email

Pacific Region Survey: Academy module on ICT for DRR – key issues

- Pacific is vulnerable to a number of natural, technological and biological hazards
- Strengthen understanding the phases of DRM and how ICT can help reduce risks and prepare Pacific communities to respond and recover from disasters
- Number of ICTs are now widely available in the Pacific and the bulk are now being used for DRR and DM
- BUT using these available ICTs are limited to the following:
  - Access
  - Cost
  - Resources
  - Capacity
  - Complexity of software and hardware
  - How to use these available ICTs??

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