

# Session 1: Sustainable Empowerment

through Rural Internet Access



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WEBINAR

# Rural Internet Access: Solving the Challenge



Catherine R. Kimambo  
CEO African Child Projects  
Advisor Basic Internet  
Foundation



Josef Noll  
CEO Basic Internet  
Foundation  
Prof. University of Oslo



[sesa-euafrica.eu](http://sesa-euafrica.eu)



# Sustainable Empowerment through Rural Internet Access

## Basic Internet Foundation

Catherine R. Kimambo, Josef Noll, Wisam A. Mansour, Albert Misilimbo, Jonathan Muringani



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 101037141. This material reflects only the views of the Consortium, and the EC cannot be held responsible for any use that may be made of the information in it.

# Sustainable Empowerment - what are the catalysts for the SDGs?



**SDG 1.4** Equal access to basic services

**SDG 4.A** Education facilities for effective learning for all

**SDG 5.B** Use of enabling technologies

**SDG 9.C** universal and affordable access

**SDG 16.10** ensure public access to information

**SDG 17** Partnerships for the Goals



# Rural Internet Access



Catherine R Kimambo connecting her  
first village

<https://vimeo.com/368147538> - 2020

“My mobile is  
more important  
than a weapon”

Head of Mbaash, TZ



The first search was:  
Mount Kenya - our cultural heritage  
Usingo Secondary School, KE





# Commercialisation of the Internet

## understanding the business

Jun1973: Norway (Kjeller) connected, then London

Jun1986: RARE/TERENA...GEANT (NRENs in Europe)

1993 - 2G (GSM) **privatisation** of Telecom

1999 - 3G (UMTS): 3 x ROI expectation, Uni co-dev

2004 - 4G (LTE): 120 km range, Supplier dev



Societal Security - Digital Public Infrastructure (DPI)

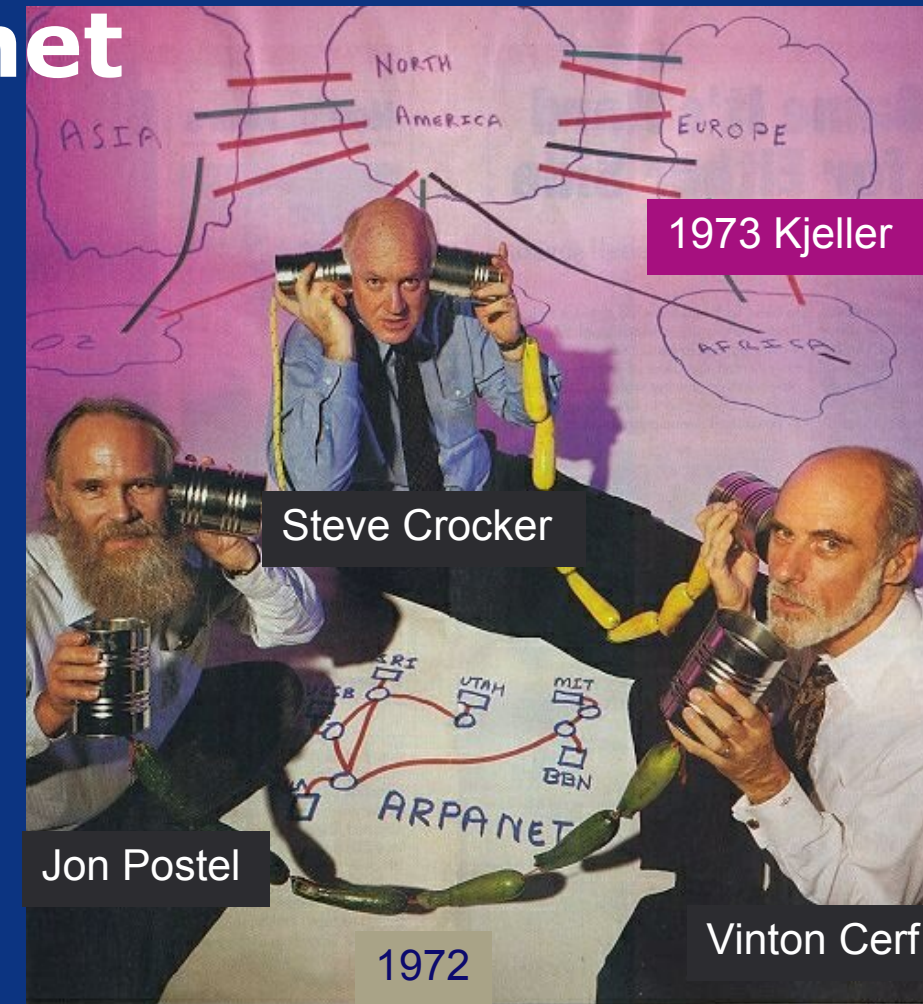
Aug2003: Reykjavik "Cybersecurity"

Jun2019: UN High Level Panel on Digital Cooperation

Mar2023: Digital Public Infrastructure (DPI)



Vint & Sigrid, Nordunet 2003



Source: <http://www.michaelkaul.de/History/history.htm>



# Reality of the Digital Divide



1. Boys have the toys



DallE - "Boys have the toys"

2. The cost of access



DallE - "African girl suffering from mobile broadband costs "



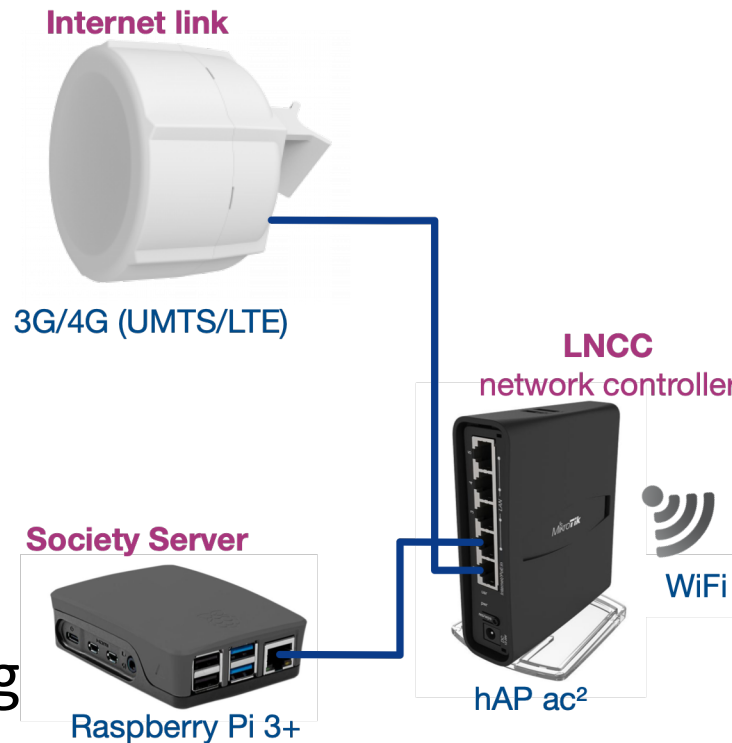
# **The SESA InfoSpot**



# Rural Internet Access: The SESA InfoSpot



- Reaching out 20+ km to mobile network
- Affordable solution
  - OPEX <20 USD/month
  - CAPEX
    - 420 USD equipment
    - 1200 USD install & training



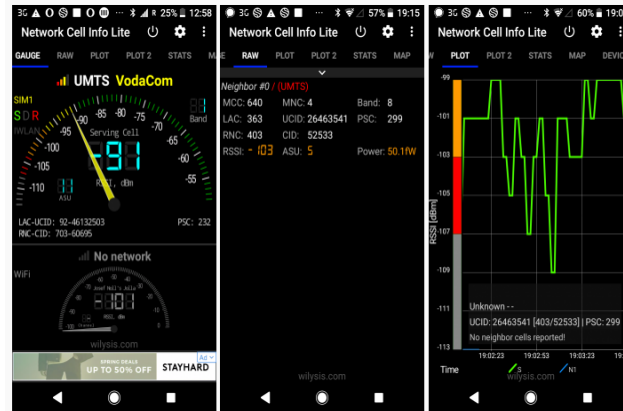




# Community-driven access



- Identify your your need & sustainability (20 USD/month)
- Measure the mobile network
- Establish Connectivity



# **The Collaborative Approach**



# Digital Public Infrastructure (DPI)



[Source: <https://www.gatesfoundation.org/ideas/digital-public-infrastructure> ]

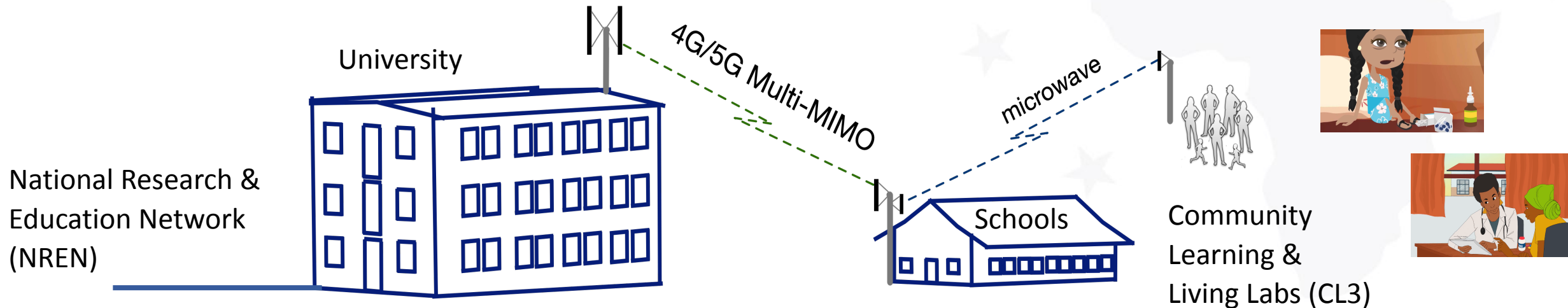
- Where are the pedestrians & cyclists?
- Step 2: Apply the model of the roads to the Internet - free for digital pedestrians and digital cyclists

# Instantiation of Digital Public Infrastructure



collaboration by

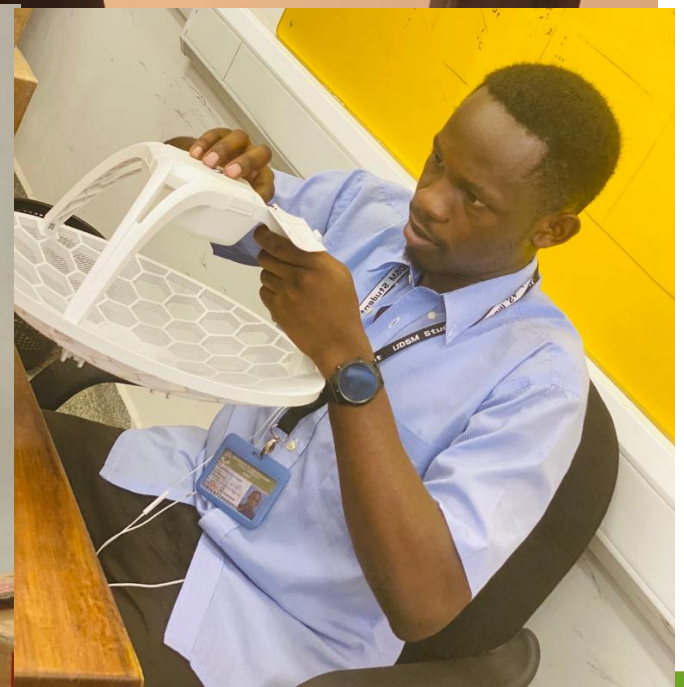
- University to build Regional Competence Centres (RCCs) and connect via NREN and 4G/5G
- Mobile Operators to share infrastructure
- Government to support School Connectivity & CL3
- NGOs to establish digital friends and empower the community





# Regional Competence Centre (RCC)

- Competence, Configure
- Install at schools/communities





# Schools/Communities



- Connect the schools
- Create content
  - Energy
  - Health
  - Gov. Services





# “Connect The Future” - Selela Market Place

antenna



- Antenna in 6 m height
- Reaches Tigo tower 20+ km away

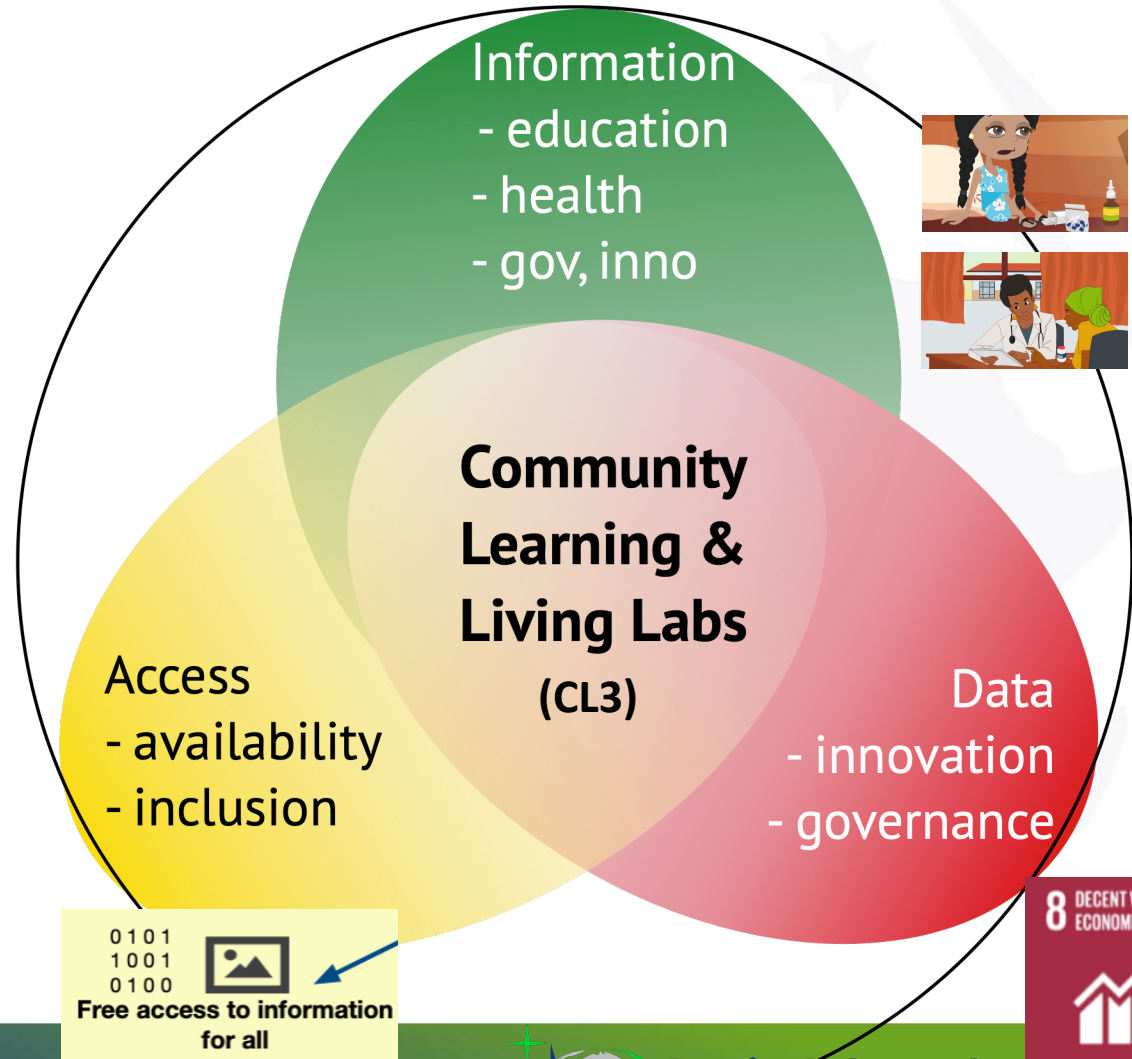


# **Innovative Solutions & Best Praxis**

# Community Learning & Living Labs

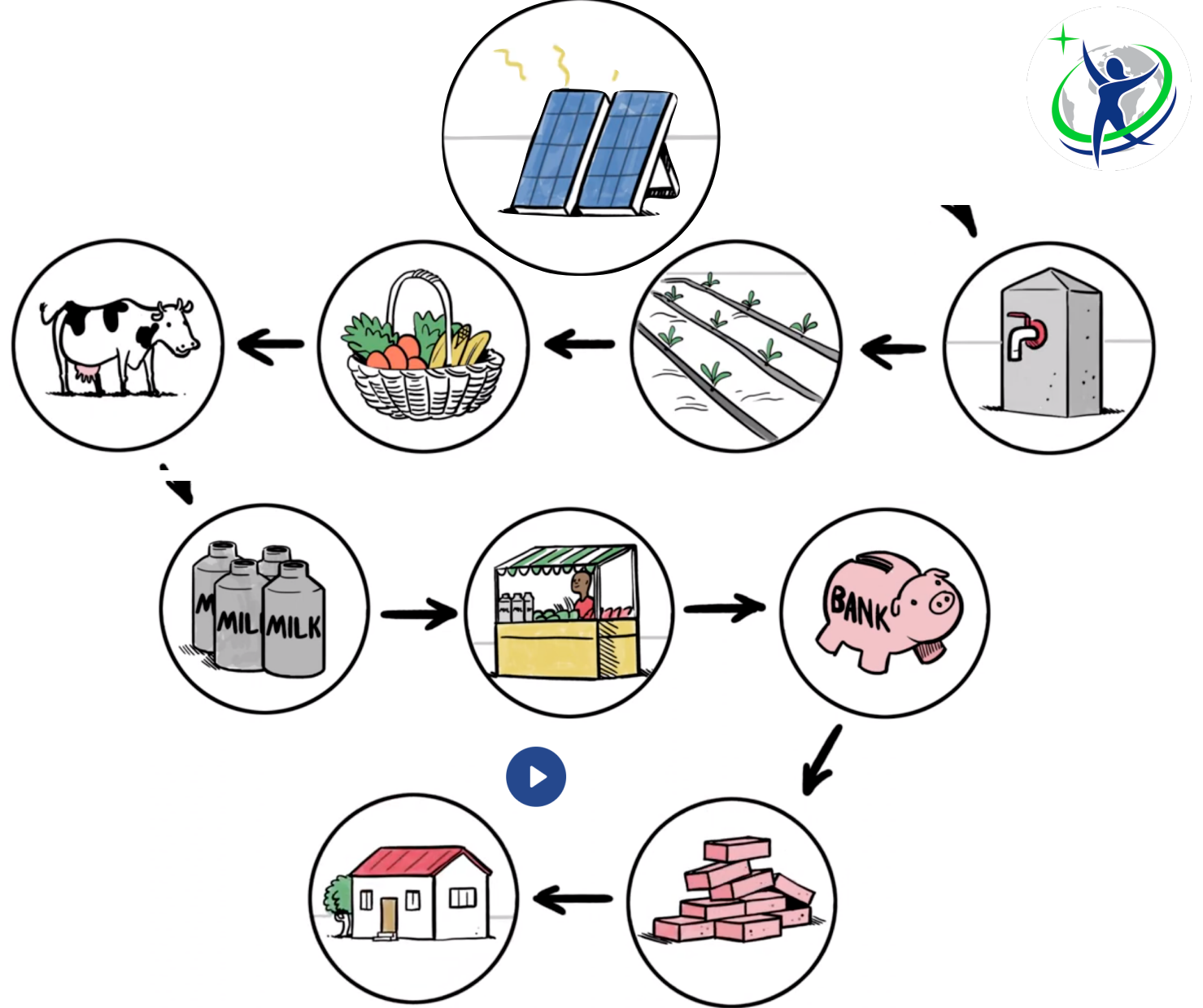


- Trustworthy Access to Information
  - Energy, Health, Education
  - Agriculture, Entrepreneurship
- Inclusive & free access
  - for everyone
- Innovation
  - Adopt the model of the road
  - Free access to digital pedestrians and cyclists



# Energy value creation

- Lights
- Clean water
- Pumps
- Crafting



[Source: Innovation Africa, [innoafrica.org](http://innoafrica.org)]



# Opportunities



- Trust through local content
  - Energy, Health, Empowerment
- Base for business
  - Sales of electricity
  - Portal for electrical & consumer equipment
  - Customer acquisition
  - Insurance
  - Banking
- Monitoring & control of Internet of Things (IoT)



DallE - "African Girl enjoying trusted Internet on her mobile"

# What would you like to hear more about?



## Follow-up

**Session 2: Community Engagement and Empowerment**

**Session 3: Lessons-learned from Field Work**

## Course Content

**L0:** Intro

**L1:** Regional Competence Centre (RCC) for connectivity and regional inclusion

**L2:** Regional SESA InfoSpots for energy empowerment

**L3:** Digital inclusion and sustainable development in rural regions

**L4:** Providing Information on Energy

