From Bits to Bites

ICTs in Food Security and Nutrition Programmes

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Food Security, Nutrition and Resilience

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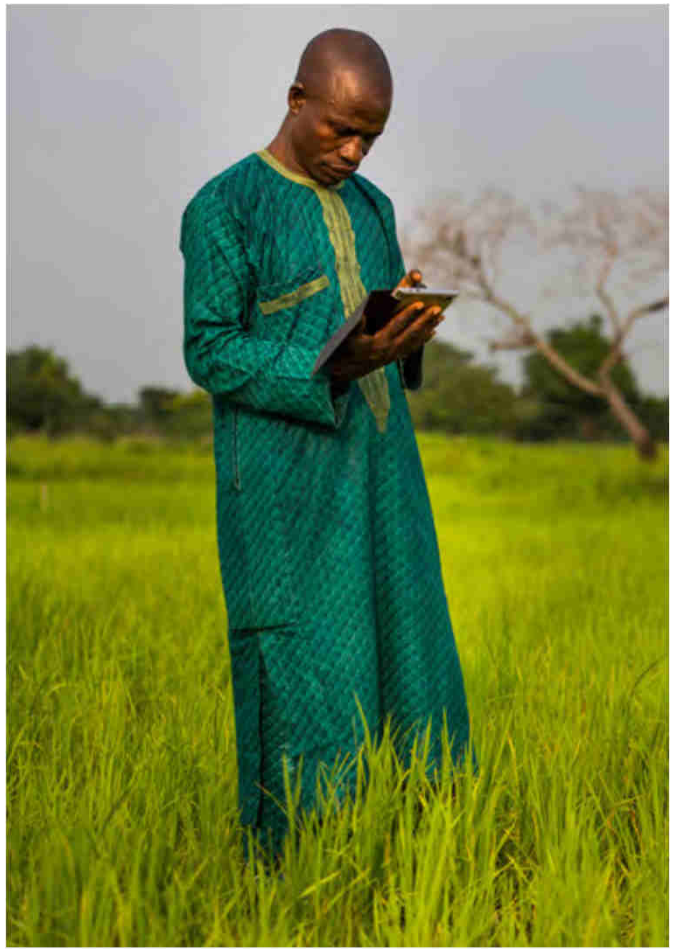
“…the computer is the most remarkable tool that we’ve ever come up with.
It’s the equivalent of a bicycle for our minds.”
Steve Jobs, 1980

Content

Evidence review of applications of digital technology to improve nutrition

- Background
- Method
- Findings
- Challenges and success factors

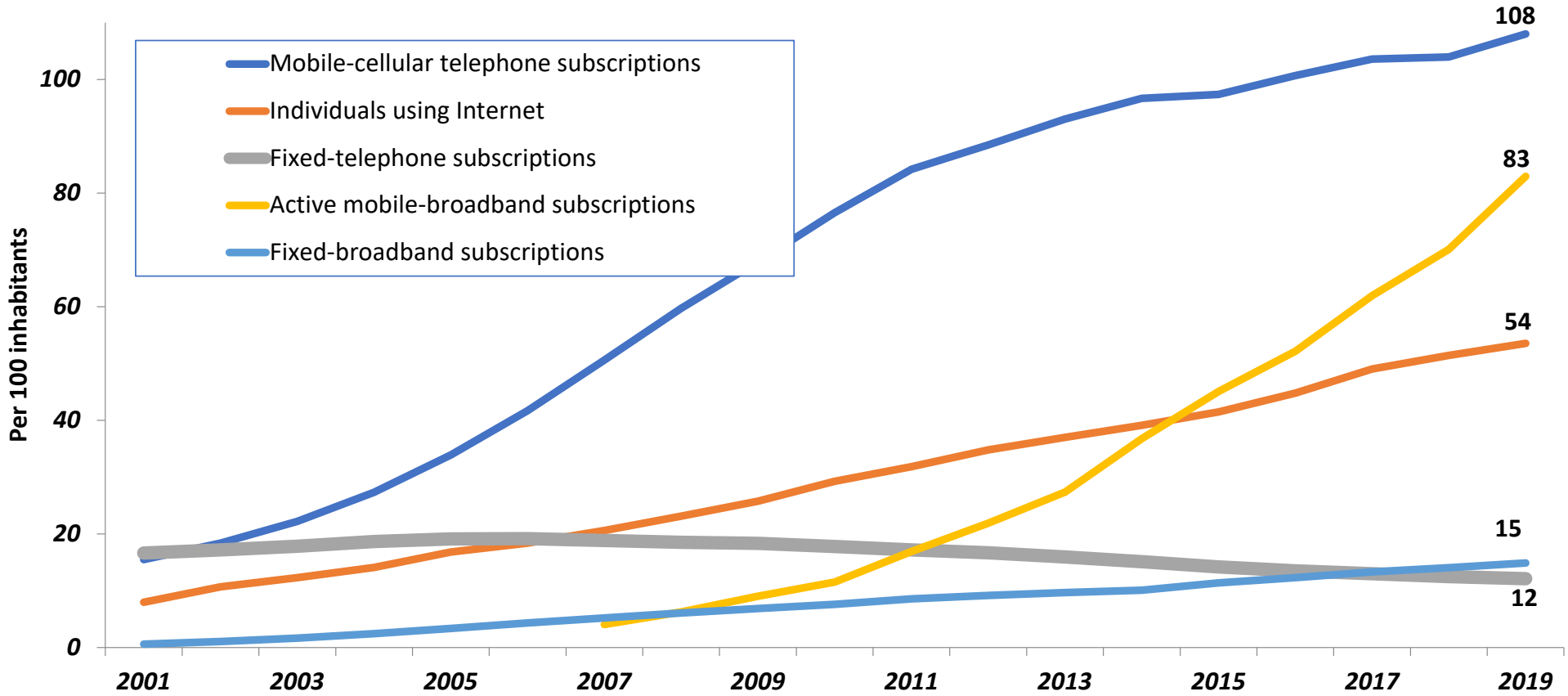


Background

- 4.1 billion people (more than half global population) were using internet at end 2019
- Uneven technology growth – in Africa ICT use is much lower than rest of world
- Adoption of technology can help drive reductions in poverty and inequality
- GIZ would like to better harness ICT to address poor nutrition

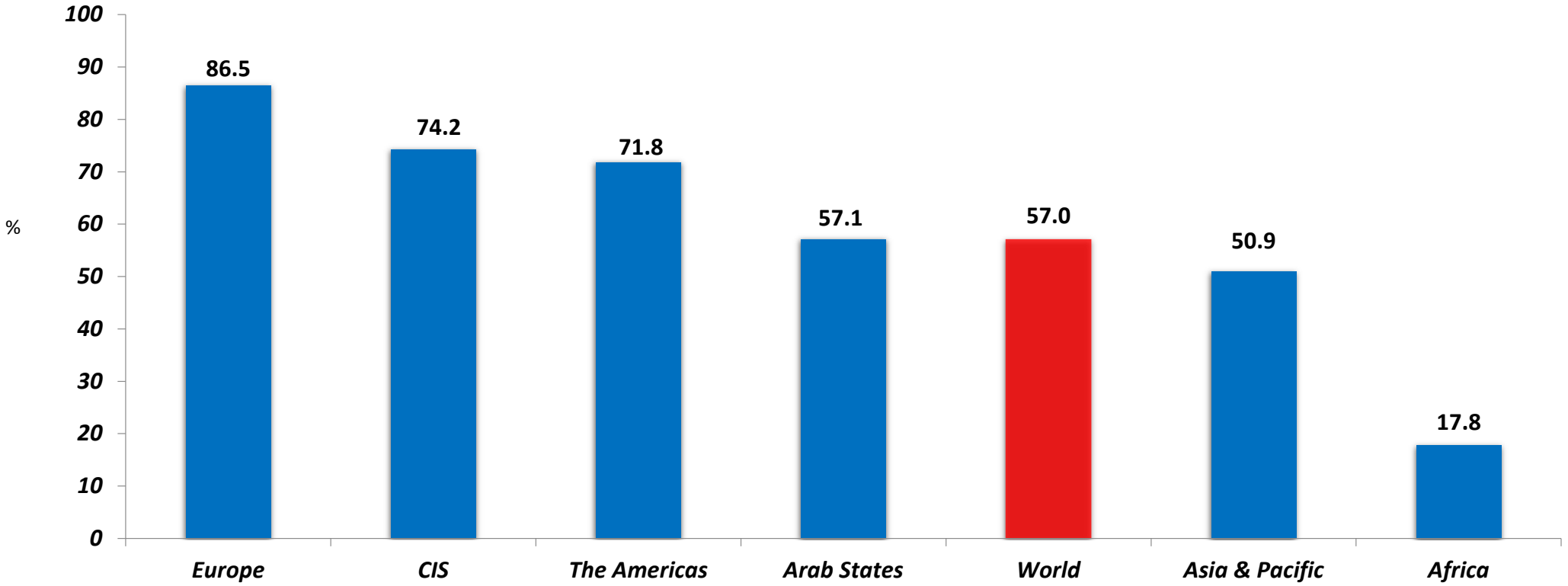
Growth in ICTs globally, 2001 – 2019

Source: International Telecommunication Union



Percentage of households with internet by region, 2019

Source: International Telecommunication Union

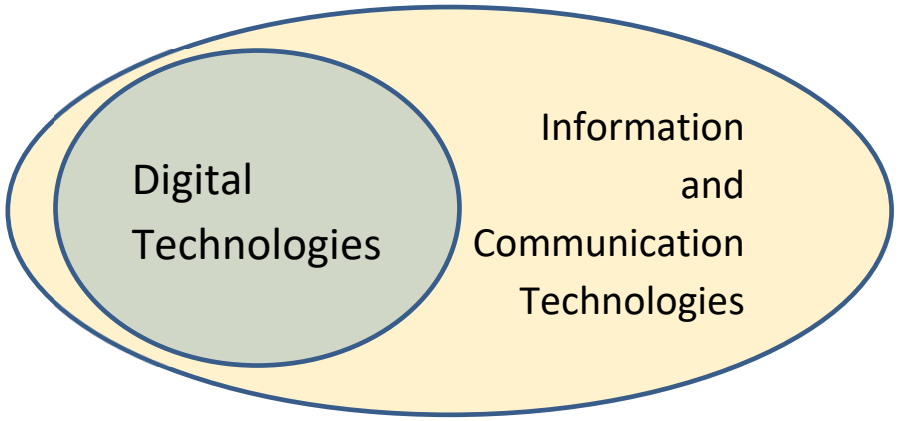


Methods

- Desk-based review of academic and grey literature over past ten years
- Also incorporated 2018 survey on use of DTs in GIZ nutrition projects
- Searched institutional websites (eg FAO, UNICEF, USAID, WFP)

  and databases (eg Pubmed, Science Direct, Web of Science)
- Used Google to identify relevant government sites, organization and interest groups sites, and specialist blogs
- Selected use-cases of ICT in nutrition-specific and -sensitive projects

Terms used, and scope



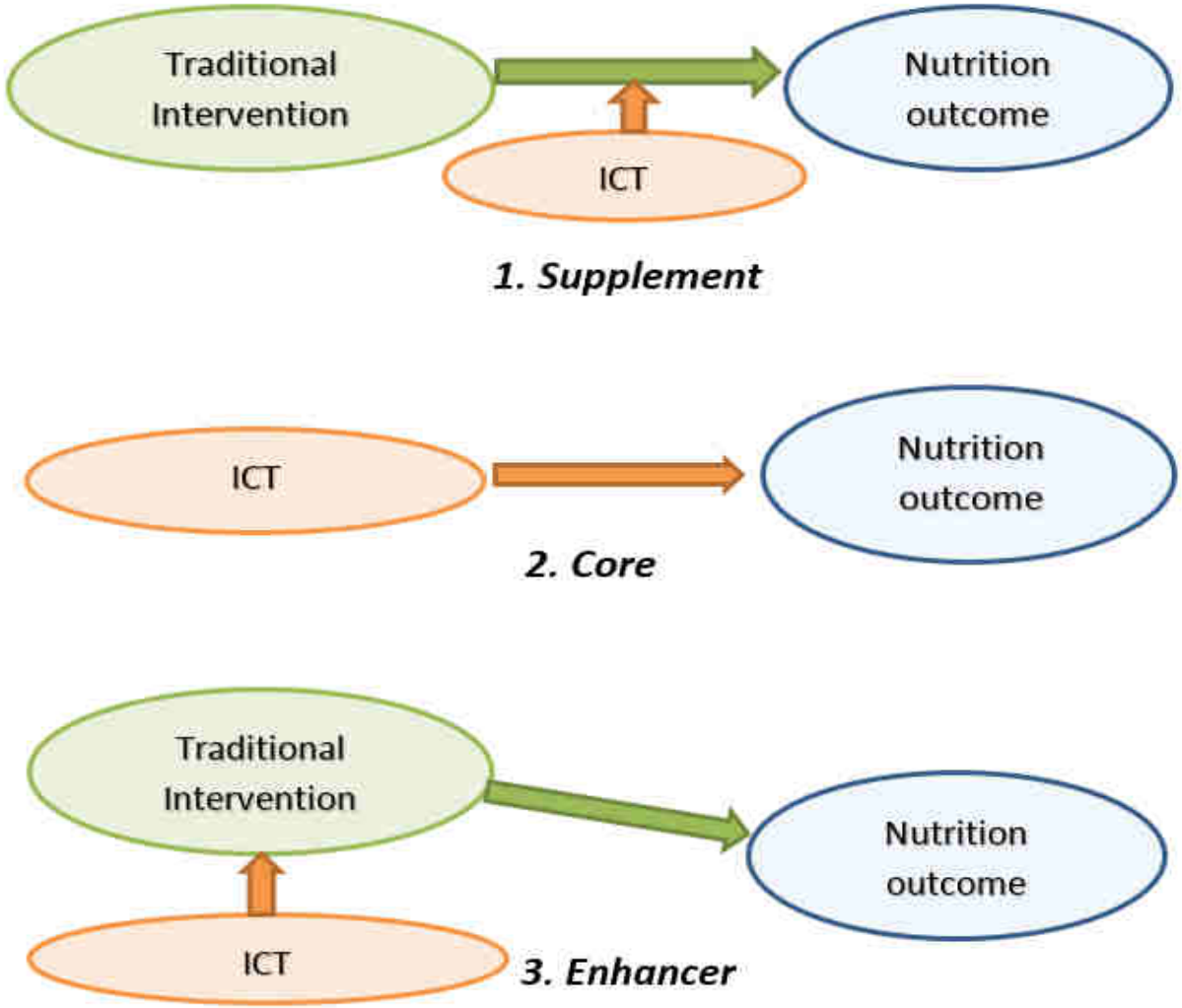
- **ICT v. DT:** The term ICT includes a wider range of technology than the term DT

- **e-Nutrition**: ***"The improvement of nutrition through use of ICT".***

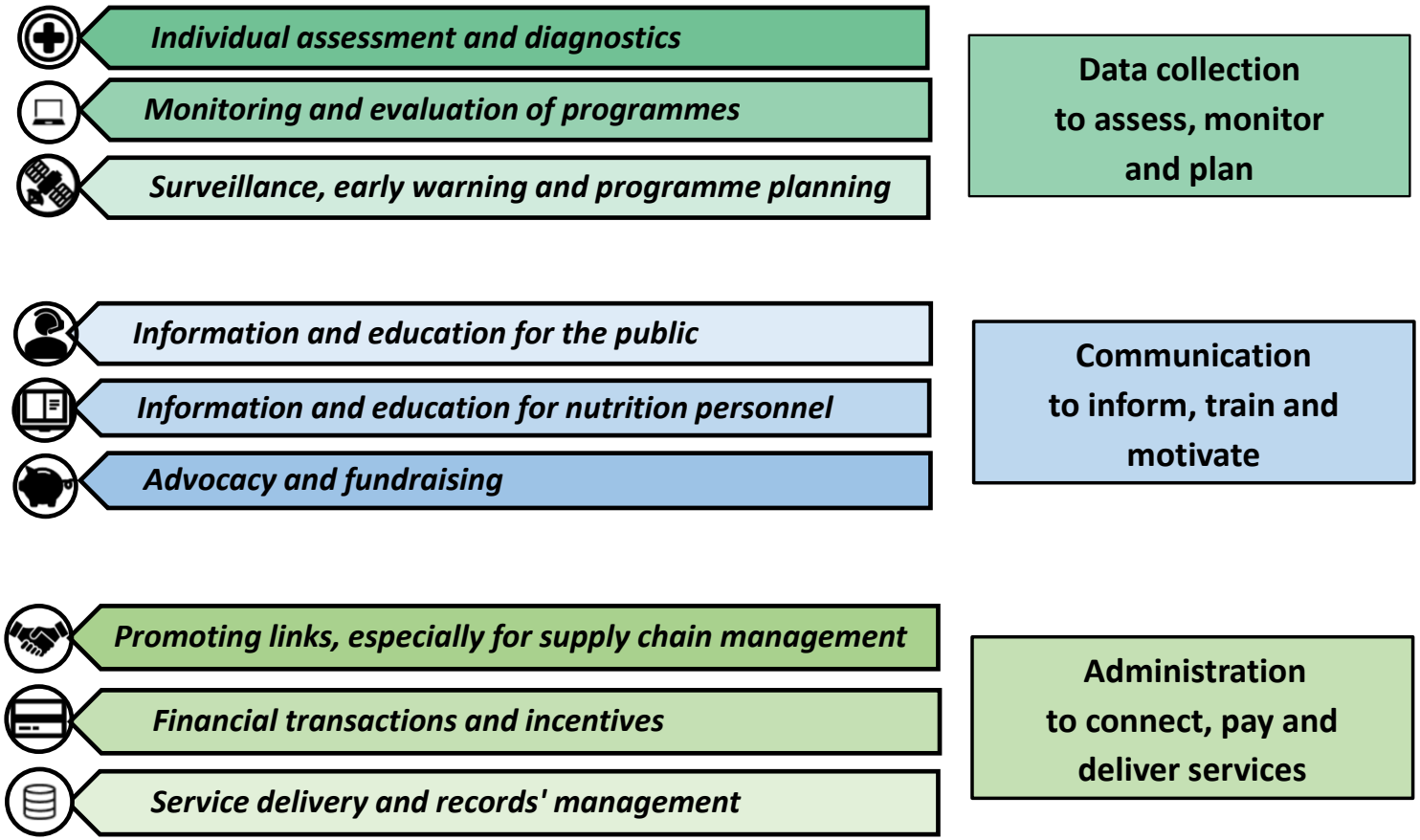
e-Nutrition involves the conceptualization, design, development, evaluation and application of innovative ways to use ICT in nutrition

- **Nutrition activities**: address determinants of foetal and child nutrition and development
  - **Nutrition-specific:** address the immediate determinants e.g. food and nutrient intake, caregiving and infectious diseases
  - **Nutrition-sensitive**: address the underlying determinants e.g. food security, caregiving resources, access to health services and a safe and hygienic environment AND incorporate specific nutrition goals and actions

Three roles of ICT for enhancing effectiveness of nutrition-related activities



Nine domains of e-Nutrition



Findings - GIZ

GIZ is very active in two domains:

2) Monitoring and evaluation

e.g. digital dashboard in India

4) Information and education for the public

e.g. Telephone hotline in Malawi

GIZ is also active in:

1) Individual assessments and diagnostics - app to calculate micronutrient intake

3) Surveillance, early warning and planning – mapping projects and indicators in Yemen

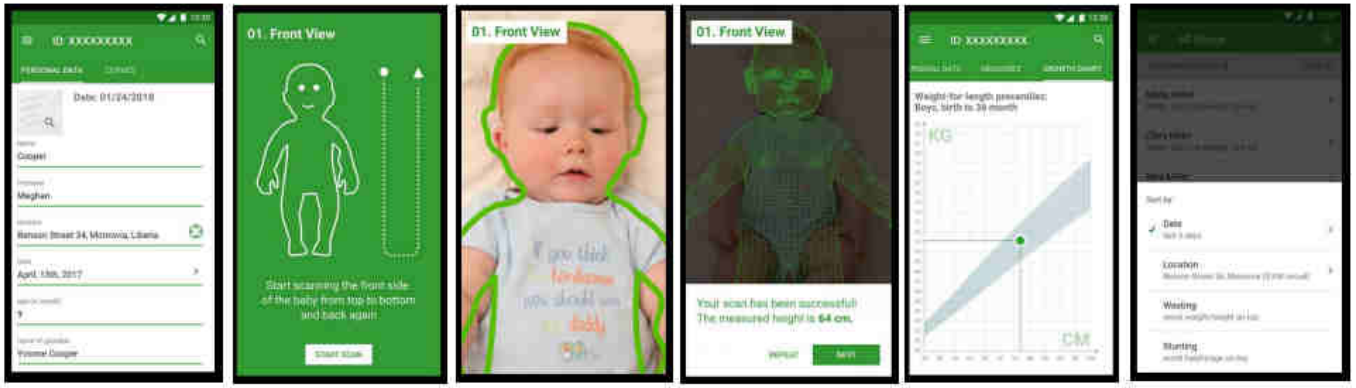
5) Information, education and decision-support of nutrition personnel – e-learning platform for nutrition workers, and Network for Information on Climate Change in India

7) Promoting links - website links producers with wholesalers in Cameroon

8) Financial transactions - supporting government administration of PDS in India

Findings – Other agencies

Wide range e.g. *Child growth monitor app, "Talking Book" and Iris scan camera*



Examples of suggestions for future GIZ activities

Data collection to assess, monitor and plan

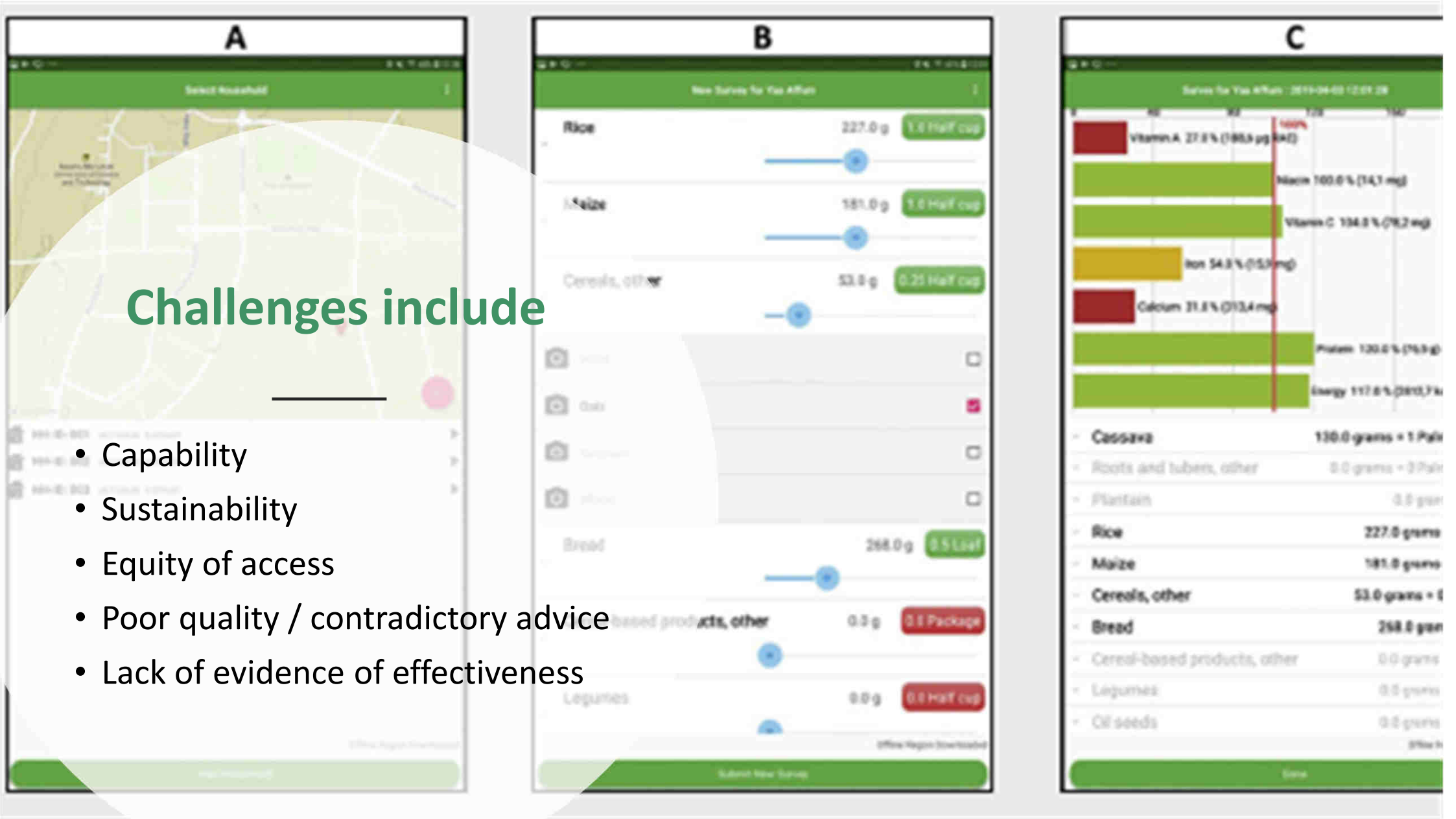
- Adopt field-friendly methods for anthropometric and micronutrient assessment
- Incorporate nutrition outcomes reinforced by ICT into social protection and WASH programmes
- Use nutrition modelling tools

Communication to inform, train and motivate

- Use wider range of technologies e.g. uni- and bi-directional SMS messages
- Create internal online forum for discussion, sharing experiences and distributing information about use of ICT

Administration to connect pay and deliver services

- Develop apps to link farmers for sharing information and experiences
- Incorporate biometric and blockchain technology into software to enable secure transactions

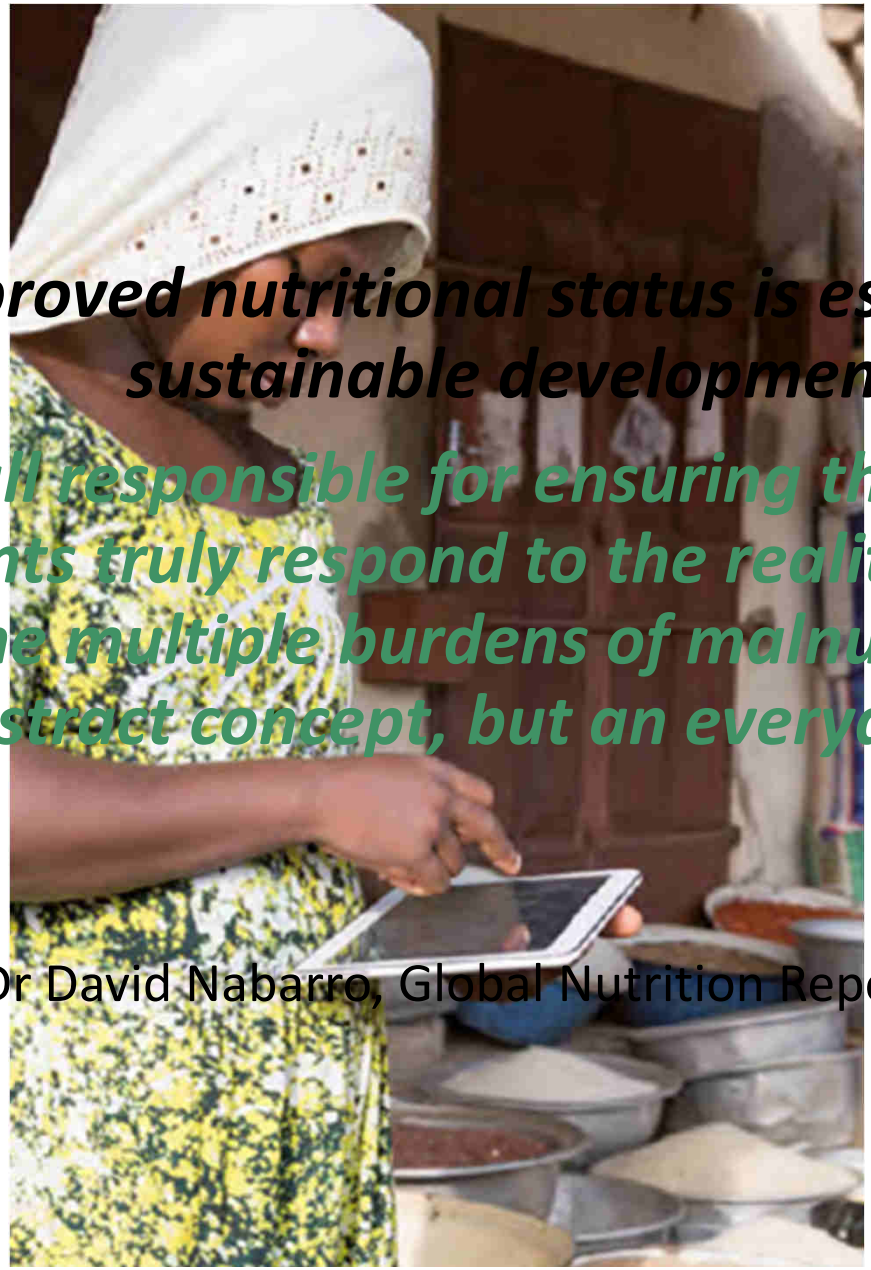


Challenges include

- Capability
- Sustainability
- Equity of access
- Poor quality / contradictory advice
- Lack of evidence of effectiveness

Seven success factors

- Content
- Capacity development
- Gender and diversity
- Access and participation
- Partnerships
- Technologies
- Sustainability



"Improved nutritional status is essential for sustainable development.

We are all responsible for ensuring that actions and investments truly respond to the realities of those for whom the multiple burdens of malnutrition are not an abstract concept, but an everyday reality."

Dr David Nabarro, Global Nutrition Report, 2014

Thank you