



# DECODING The Data Ecosystem



CGIAR

Big Data  
in Agriculture  
CONVENTION

# 2018

3-5 OCTOBER. NAIROBI, KENYA

## Leveraging ICTs for Small-scale Fisheries in Asia

Alex Tilley, WorldFish

### ANALYTICS

turn vast amounts of geocoded, structured and unstructured data into actionable information and knowledge.



### SOCIAL MEDIA

connect people to people across the globe.



### DIGITAL SERVICES

connect people to information and allow people to engage, share and transact, regardless of location.



### SMART SYSTEMS

generate efficiencies by automating work, responding to events that impact that work and optimizing the use of resources.



### CLOUD COMPUTING

provides a universally accessible place to store data and host applications.



### 3D PRINTING

enables the production of objects such as tools and spare parts on demand from any location.



### MOBILE DEVICES

allow people to stay connected and take advantage of ICT solutions anywhere and anytime.



### CONNECTIVITY

provided by data and telecommunication networks connects people to people, information and digital services.



### SATELLITES & UAVs

put information in the context of the planet on which we live.



### THE INTERNET OF THINGS

connects anything from sensors to intelligent devices to people and systems over the Internet to support evidence-based decision-making.

### POWER

and the innovative approaches for providing it eases the deployment of technology even in remote locations.



# In what ways can ICTs be used in SSF?

## A. Governance of tenure in SSF and resource management

Catch data & analysis; Fishing effort tracking;  
Biological monitoring

## B. Social Development, Employment and decent work

Awareness & Extension services; Safety at Sea; Networking

## C. Value Chains, post-harvest and trade

Benefits distribution; Transport efficiency;  
Post-harvest preservation; Traceability

## D. Disaster Risk and Climate Change

Reducing risk and uncertainty; Disaster response and preparedness



# Global Review of ICTs for SSF

36 ICTs summarized by use type and region (where tech has been applied)

	Africa	Asia	Europe	North America	Latin America	Oceania	Global	
<b>A</b>	Catch data, analysis & mgt	3	5	1	2	4	3	25%
	Effort tracking	1	5	0	1	1	1	12%
<b>B</b>	Extension & Info Services	2	3	0	0	1	0	7%
	Safety at Sea	1	8	1	0	2	0	14%
<b>C</b>	Value Chain & post-harvest	2	7	0	0	1	1	13%
	Traceability	2	7	0	3	3	6	28%
	13%	41%	2%	7%	14%	8%	13%	



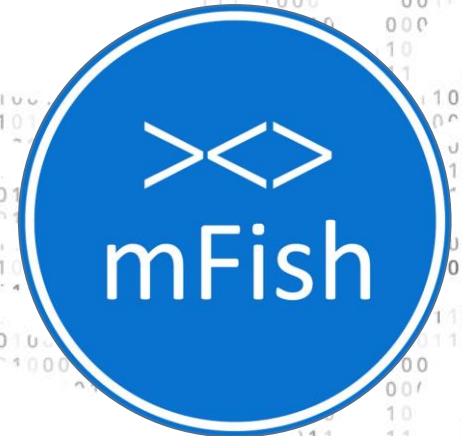
# Case study - mFish

- U.S. State Department - end overfishing by 2020
- Partnership with TONE and a fisher org in Lombok, Indonesia
- Phones to access navigation tools, weather info and catch recording
- User-centred design

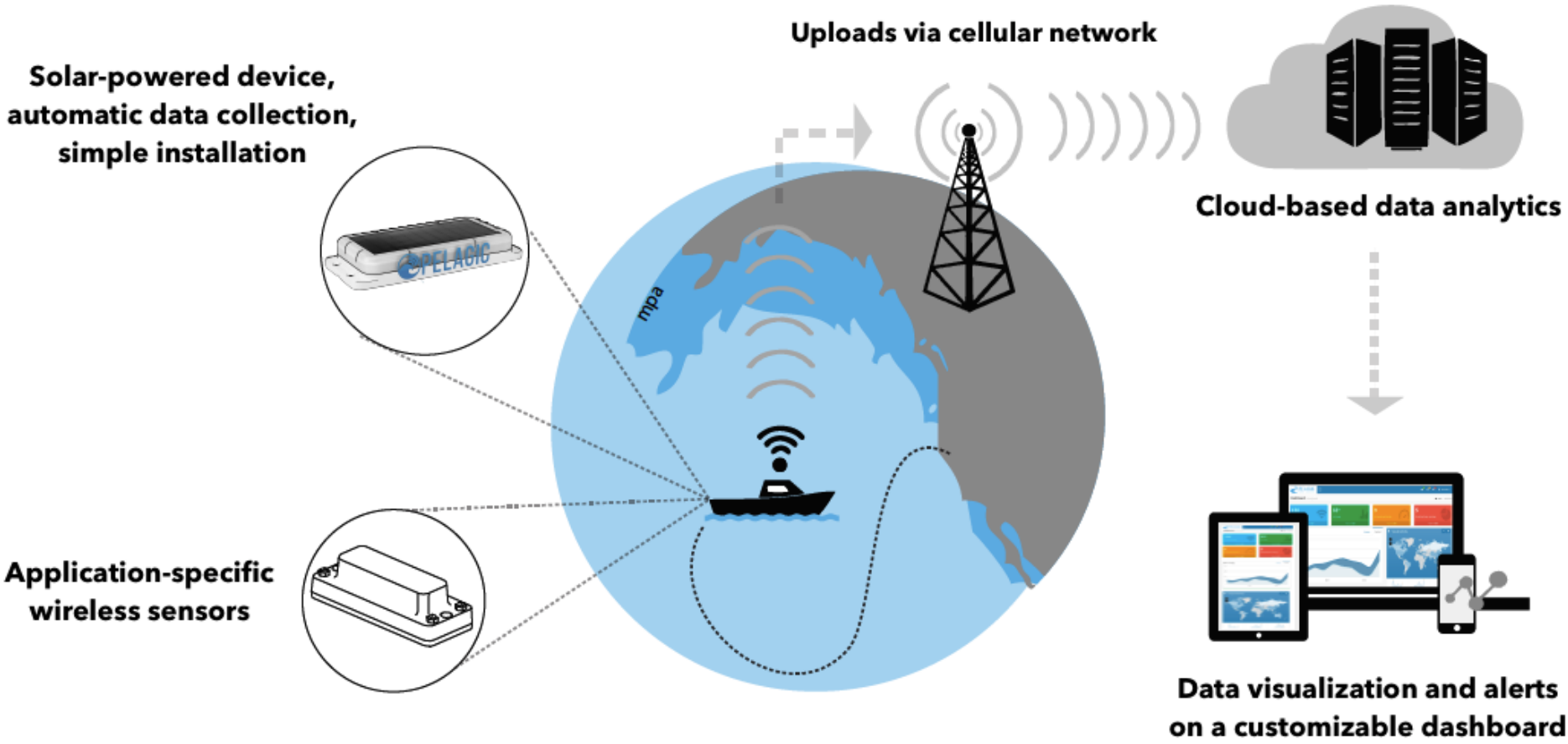


# Key Findings - mFish

1. **Design-reality gaps:** a mismatch between design assumptions and on-the-ground realities of fishers & communities
  - Limited connectivity – no offline functionality for maps, navigation, weather
2. Limited stakeholder engagement in early phases of design and development
3. Limited opportunities for program continuity
4. Lack of integration with national systems



# Case study – Pelagic Data Systems



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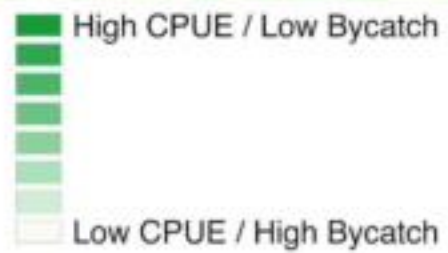
Benefits distribution; Transport efficiency;  
Post-harvest preservation; Traceability

## D. Disaster Risk and Climate Change

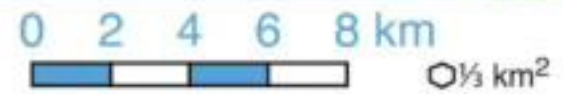
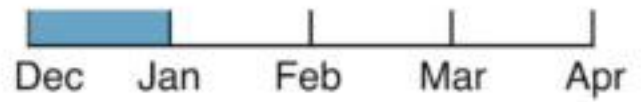
Reducing risk and uncertainty; Disaster response and preparedness







## Best Fishing Grounds



# Key findings – Pelagic Data Systems

Different levels of data analytics and integration

Customized integration with existing architecture (to provide 1<sup>st</sup> mile data to connect with CDT systems)

Better management potential, but limited evidence of utility for fishers

Extensive piloting, but limited stakeholder engagement in design and development.



# Key Challenges

A close-up photograph of a person wearing a traditional, wide-brimmed woven straw hat. The person is looking down at a smartphone held in their hands. The background is slightly blurred, showing what appears to be an outdoor or semi-outdoor setting with some equipment or structures.

- Barriers to Affordable Access (cost and coverage of power and networks)
- Gender equity
- Regulatory environment
- Sustainability – development NGO project timelines
- Behaviour change
- Underlying diversity and low capacity of SSF sector
- Privacy & security
- Architecture and interoperability (e.g. data linkages)

# Thank you!



Platform for  
Big Data  
in Agriculture

[bigdata.cgiar.org](http://bigdata.cgiar.org)

