# Sustainable Energy Industry development Project: Resource Mapping

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**Isabel Neto**
Senior Energy Specialist, World Bank Group
**Katherine Baker**
Consultant, World Bank Group

ESMAP
Energy Sector Management Assistance Program

WORLD BANK GROUP
Energy & Extractives

# Resource Mapping - Phased Approach

**Phase 1: Preliminary resource mapping output based on satellite and global atmospheric and meteorological data**

- Initial resource estimate at the country level based on a mesoscale model using satellite and re-analysis data; preliminary validation using existing ground-based data.
- ESMAP-led, solar maps published completed for PICs June 2017, wind maps to be completed by November 2017

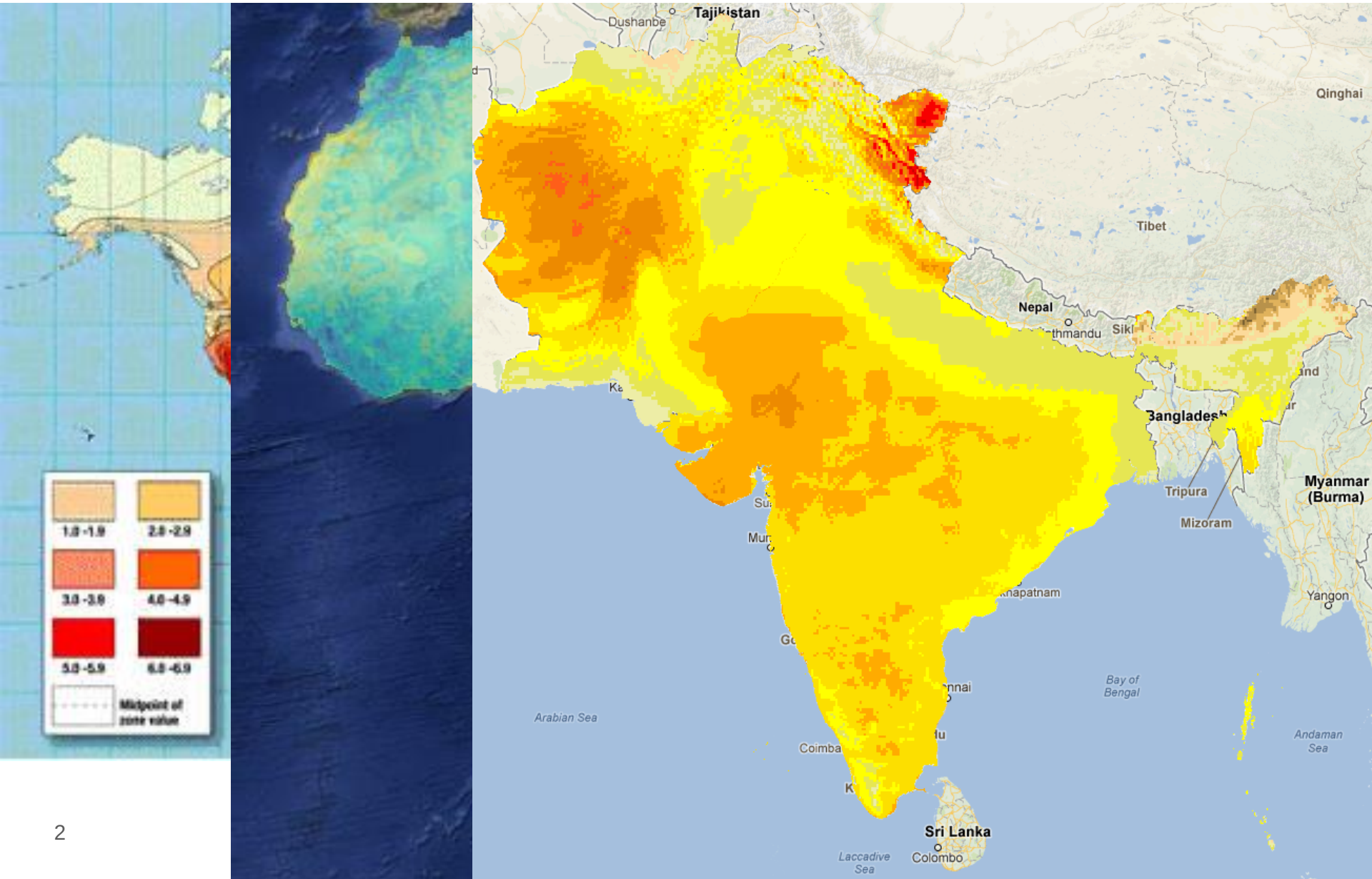
**Phase 2: Ground-based data collection**

- Ground-based measurement campaign using high-quality measurement devices, with real-time data transmission and reporting, for the purpose of validating and improving the mesoscale model and generating reliable benchmarking data.
- PPA-led, RFP expected to be published in August 2017

**Phase 3: Production of validated resource atlas based on satellite and ground-based data**

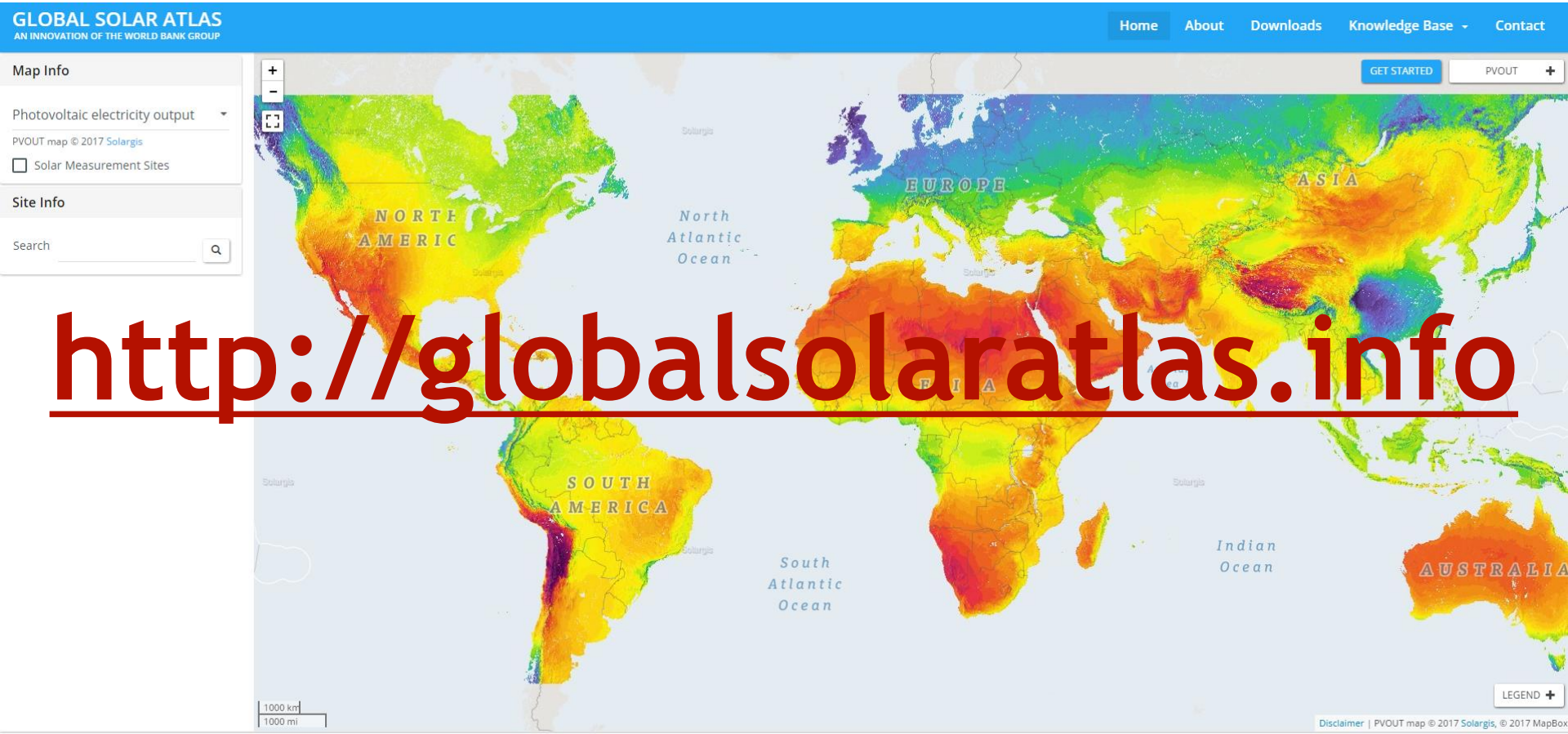
- Preparation of validated resource maps and atlas reports that describe the final outputs, methodology and process, and include provision of the final geographic information system (GIS) data.

# EXISTING MAPS - PROLIFERATION AND CONFUSION



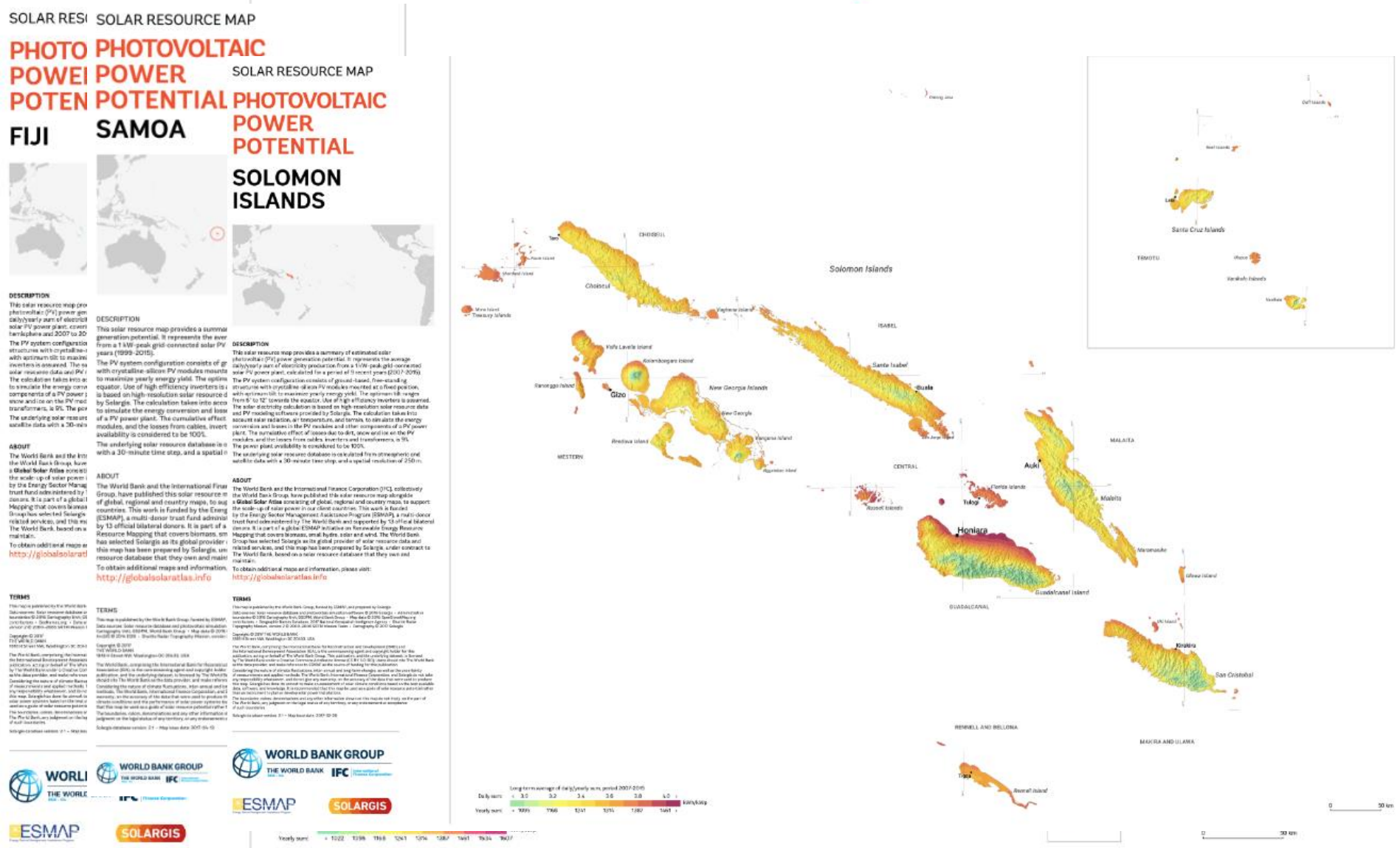
# GLOBAL SOLAR ATLAS

- Launched in January 2017, maps for PICs available since end June 2017
- Based on high quality modeled solar data from Solargis
- Around 65,000 visitors since launch
- Poster maps and GIS layers for all developing countries



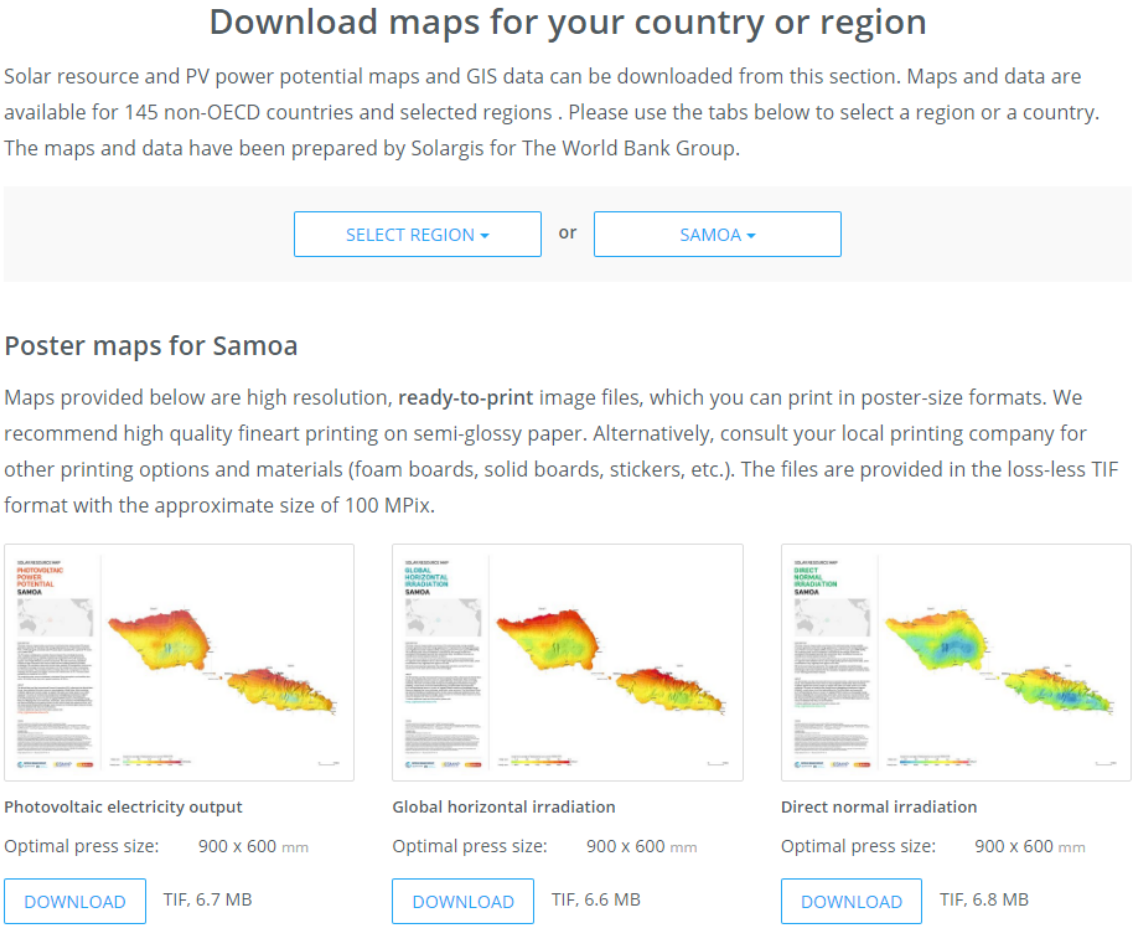

http://globalsolaratlas.info

# MAPPING COMPLETED!

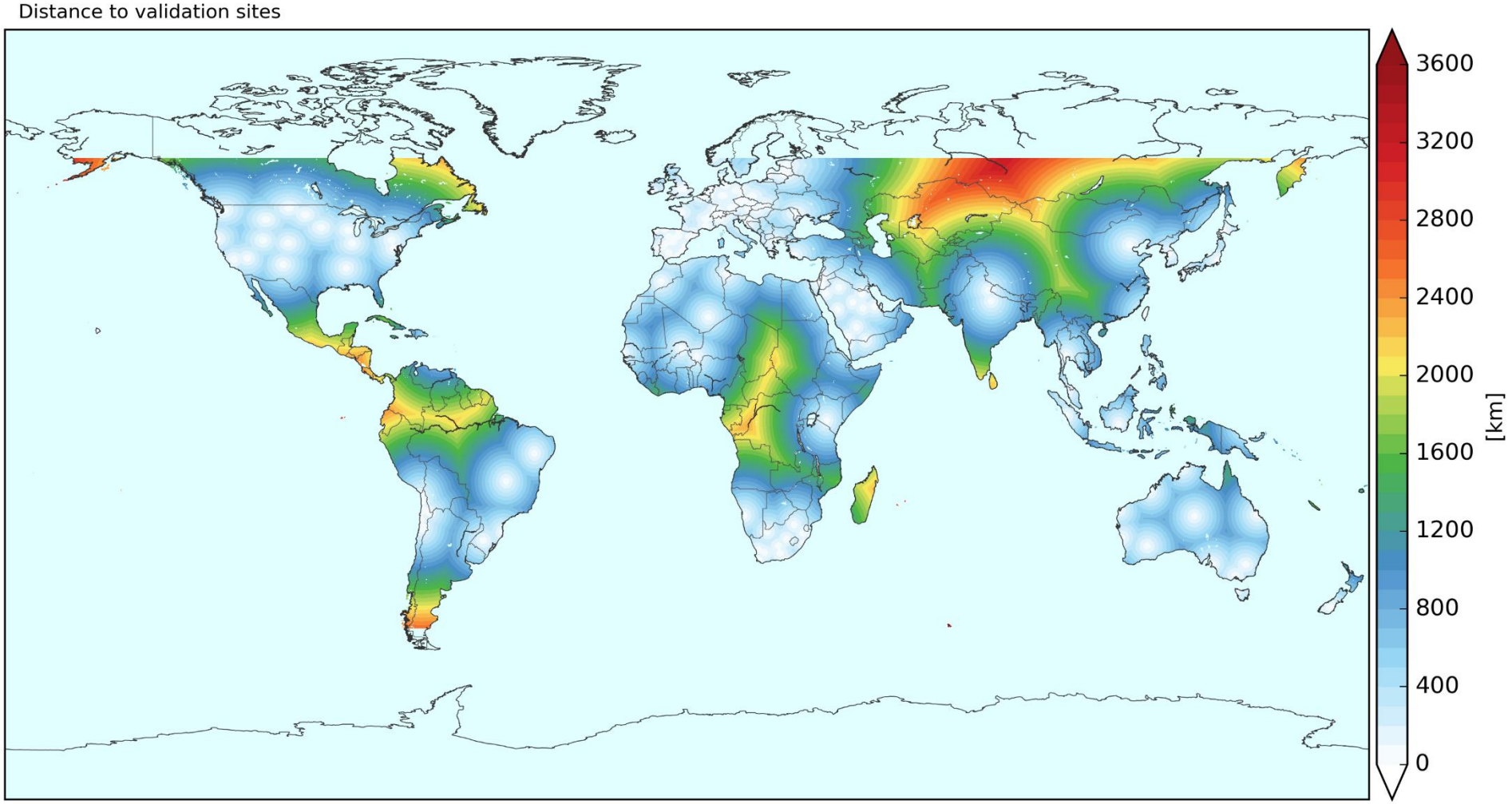


# EASY TO USE DOWNLOADS

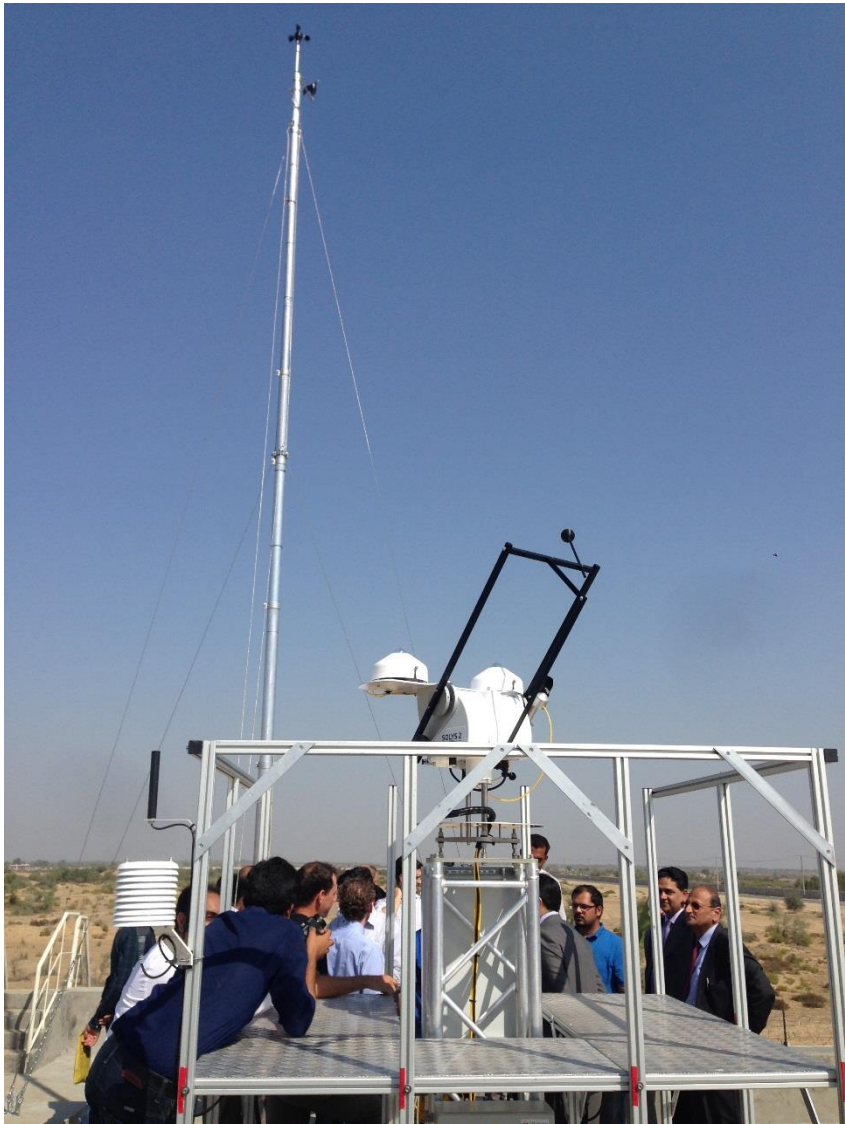
- Go to: http://globalsolaratlas.info/downloads
- Poster maps and GIS layers easy to download
- User guide: http://globalsolaratlas.info/knowledge-base/user-guide
- FAQ: http://globalsolaratlas.info/knowledge-base/faq
- Has anyone used the site already? Feedback?



# BUT UNCERTAINTIES REMAIN



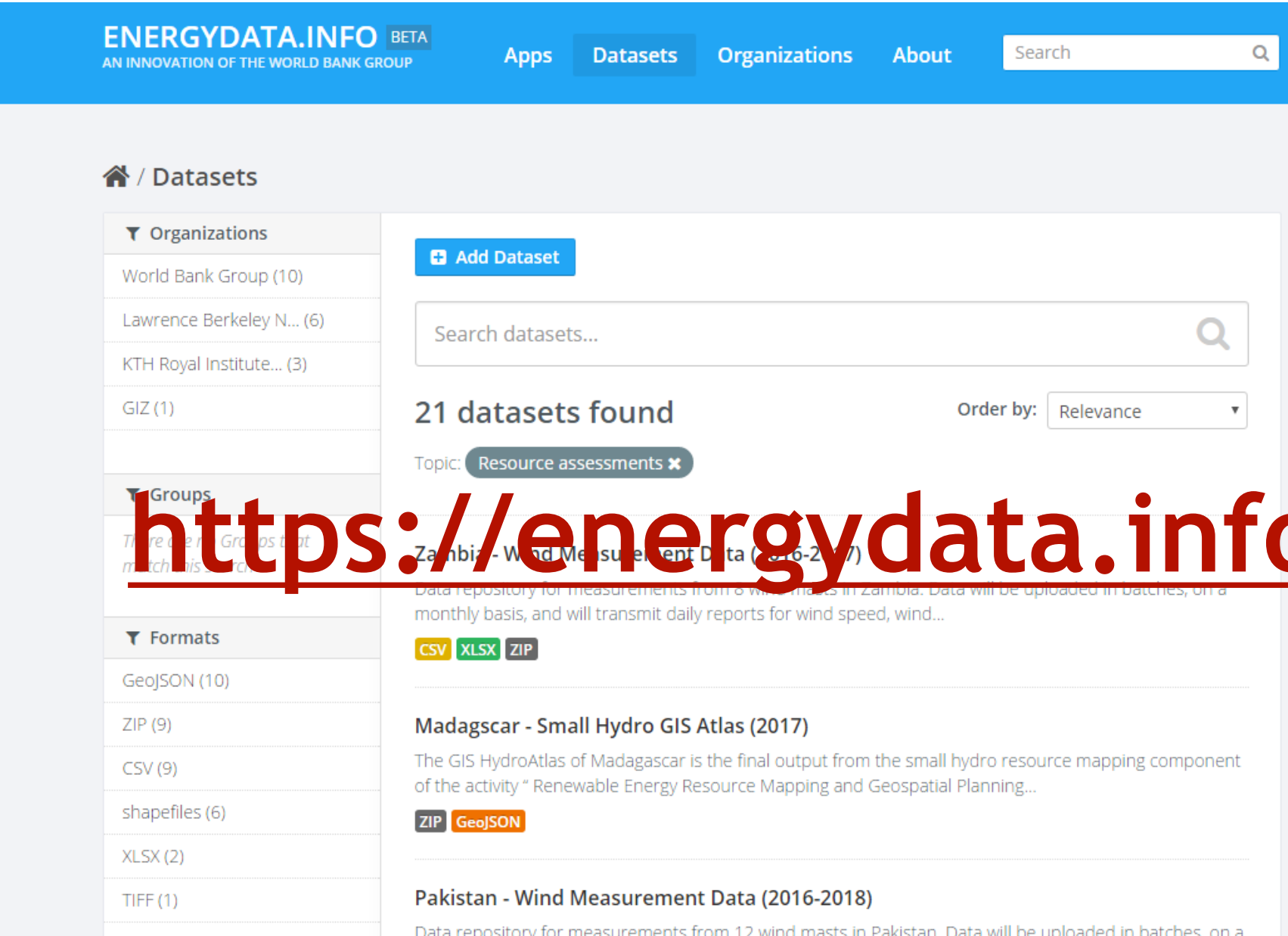
# NEED TO INVEST IN HIGH QUALITY MEASUREMENT DATA



# COUNTRY PROJECT PIPELINE

| Country | Funding | Source | Biomass | Small Hydro | Solar | Wind |
|---|---|---|---|---|---|---|
| **Bangladesh** | $500,000 | ESMAP / ASTAE | | | ✓ | ✓ |
| **Burundi*** | - | ESMAP | | | ✓ | |
| **Ethiopia*** | $1,600,000 | ESMAP | | | ✓ | ✓ |
| **Indonesia** | $750,000 | ESMAP | | ✓ | | |
| **Kenya*** | - | ESMAP | | | ✓ | |
| **Madagascar** | $1,350,000 | ESMAP | | ✓ | | |
| **Malawi** | $710,000 | ESMAP | | | ✓ | |
| **Maldives** | $2,415,000 | ESMAP / ASTAE | | | ✓ | ✓ |
| **Nepal** | $1,800,000 | ESMAP | | | ✓ | ✓ |
| **Pacific Islands (10 countries)** | $2,200,000 | SIDS-DOCK | | | ✓ | ✓ |
| **Pakistan** | $4,350,000 | ESMAP / ASTAE | ✓ | | ✓ | ✓ |
| **Papua New Guinea** | $1,900,000 | ESMAP / ASTAE | | | ✓ | ✓ |
| **Rwanda*** | - | ESMAP | | | ✓ | |
| **Somalia** | $1,000,000 | In-country trust fund | | | ✓ | ✓ |
| **Sudan*** | - | ESMAP | | | ✓ | |
| **Tanzania*** | $2,350,000 | ESMAP | | ✓ | ✓ | ✓ |
| **Uganda*** | - | ESMAP | | | ✓ | |
| **Vietnam** | $1,765,000 | ESMAP | ✓ | ✓ | ✓ | ✓ |
| **Zambia** | $3,600,000 | ESMAP | | | ✓ | ✓ |

# PUBLISHING THE DATA IS ESSENTIAL



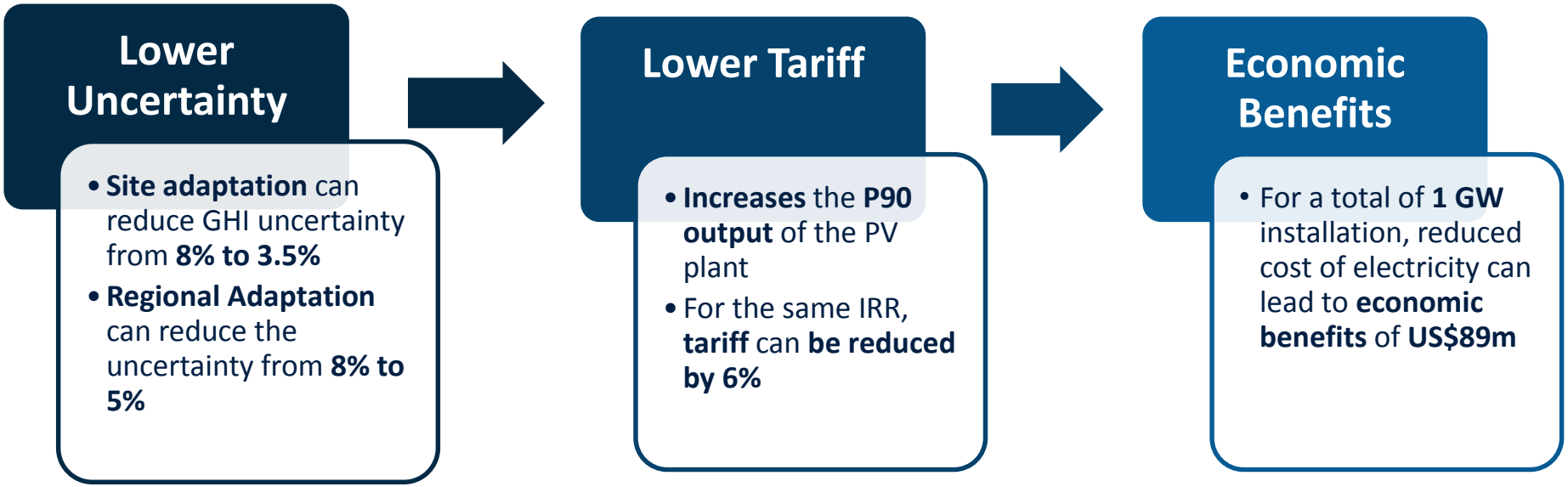
# RESEARCHING THE COST-BENEFIT OF MEASUREMENTS

x 10 = US $1m



x 1GW = ? potential economic benefit

# LOWER UNCERTAINTIES LEAD TO LOWER COST



# CONSOLIDATION IS NOW NEEDED

## Requirements for the industry

- Use, disseminate and improve the Global Solar Atlas
- Invest in public measurement campaigns
- Publish data to help improve the models

## Things to avoid

- Further solar mapping
- Use of old resource data and maps
- Cut corners when investing in measurements

## Future Plans

- Enhancements of the Global Solar Atlas
- Relaunch improved Global Wind Atlas by end of 2017
- Publish guidance on measurement campaigns

# Contact Details

ESMAP website: www.esmap.org/re_mapping
Oliver Knight: oknight@worldbank.org
Leopold Sedogo: lsedogo@worldbank.org