



**A Facility to Enable Sustainable
Energy Access to the Philippines
Rural Poor**

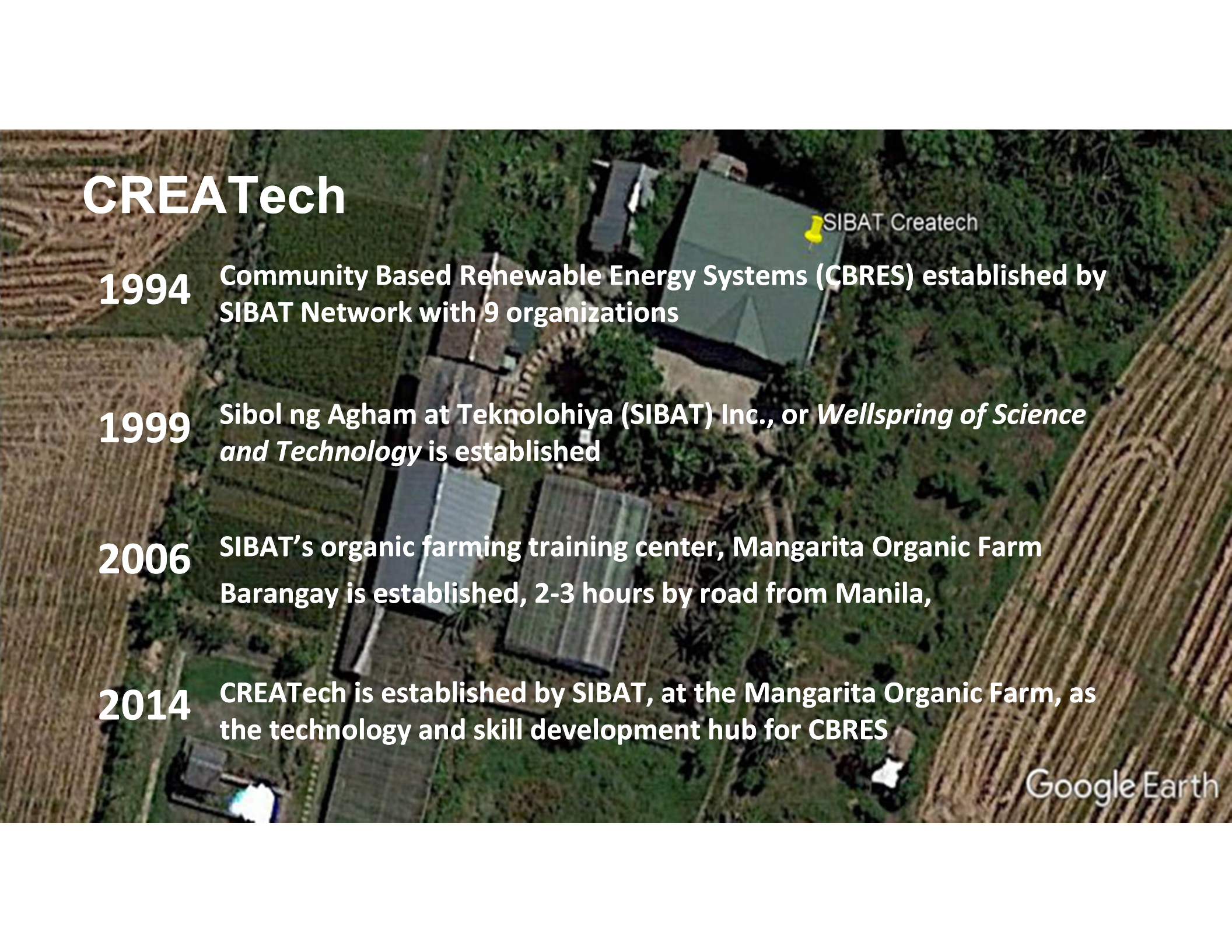
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**HYDRO EMPOWERMENT NETWORK
MINI GRIDS WEBINAR SERIES 2019
WEBINAR 1 (28 MARCH)**

**Mini-Grid Reliability: The Role of
Micro Hydro Training Centers**

CREATech

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- An aerial photograph of a rural farm area. A yellow pushpin is placed on a large building with a grey roof, labeled 'SIBAT Createch'. The surrounding area includes various smaller buildings, trees, and agricultural fields. The text of the list is overlaid on the left side of the image.
- 1994** Community Based Renewable Energy Systems (CBRES) established by SIBAT Network with 9 organizations
 - 1999** Sibol ng Agham at Teknolohiya (SIBAT) Inc., or *Wellspring of Science and Technology* is established
 - 2006** SIBAT's organic farming training center, Mangarita Organic Farm Barangay is established, 2-3 hours by road from Manila,
 - 2014** CREATech is established by SIBAT, at the Mangarita Organic Farm, as the technology and skill development hub for CBRES

Vision of CREATech

| To enable sustainable energy access to poor rural communities in the Philippines

In the Philippines, there are about 30% rural households yet without access to sustainable energy: in the off-grid barangays, and where there is grid extension that is not able to reach target barangays, villages and households.

Objectives of CREATech

To promote and advance Community Based RE Systems (CBRES) in the Philippines

Its **specific objectives** are:

- To provide the knowledge on CBRES through training of community members
- To provide information and advisory to communities in response to their requests for sustainable energy
- To assist SIBAT's Field Team in installing the system.
- To provide technical monitoring to systems and address the concerns as required.
- To conduct research and innovation on small equipment to improve efficiency of systems

CREATech serves as a **one-stop shop** to advance CBRES

CREATech Facility: Turbine Manufacturing

- ✓ Lathe Machine
- ✓ Drilling & Milling Machine
- ✓ Welding Machine
- ✓ ELC Manufacturing Unit
- ✓ Training Room
- ✓ Various other tools
- ✓ Productive End Use machinery



Types of Trainings

Troubleshooting and Initial Fabrication Training to local technicians

- Micro hydro turbines
- Electronic Load Controllers

Operation and Maintenance Training to village-level operators

- Basic theory of micro hydro power system and practicum
- Preventive maintenance on site and actual operation of the system
- Training and retraining during repairs and upgrading

Organizational and Financial Training to village-level project managers

- These are being given during and upon commissioning of the system
- Facilitation of policy formulation, organizational development, bookkeeping.

Orientation and Awareness Training to local government units

- CBRES concept and design for communities
- Roles of LGUs to assist CBRES development

Recent Exchanges at CREATech

Institutional Training

- ✓ Two exchange type of **organizational and finance trainings** were held since 2015. CBRES representatives were gathered to share and exchange about their organizational experiences and problems. Among them were CBRES with more advanced experiences, and provided the leading insights to improve on organizational methods.
- ✓ About 16 CBRES organizations had attended these exchange type of trainings.



Recent Exchanges at CREATech

Micro Hydro Operator's Training

- ✓ Four(4) **exchange type of operator trainings** were held since 2015, i.e., annually; Operators were gathered to exchange about their O&M experiences and problems, and were given the needed inputs;
- ✓ About 70 operators attended the exchange type of trainings for CBRES projects;
- ✓ Other partner institutions wishing to adopt CBRES brought their partner communities to the center to acquire theoretical and practical training



RESEARCH & INNOVATION

ACCELERATE
DEPLOYMENT OF
MHP SYSTEMS

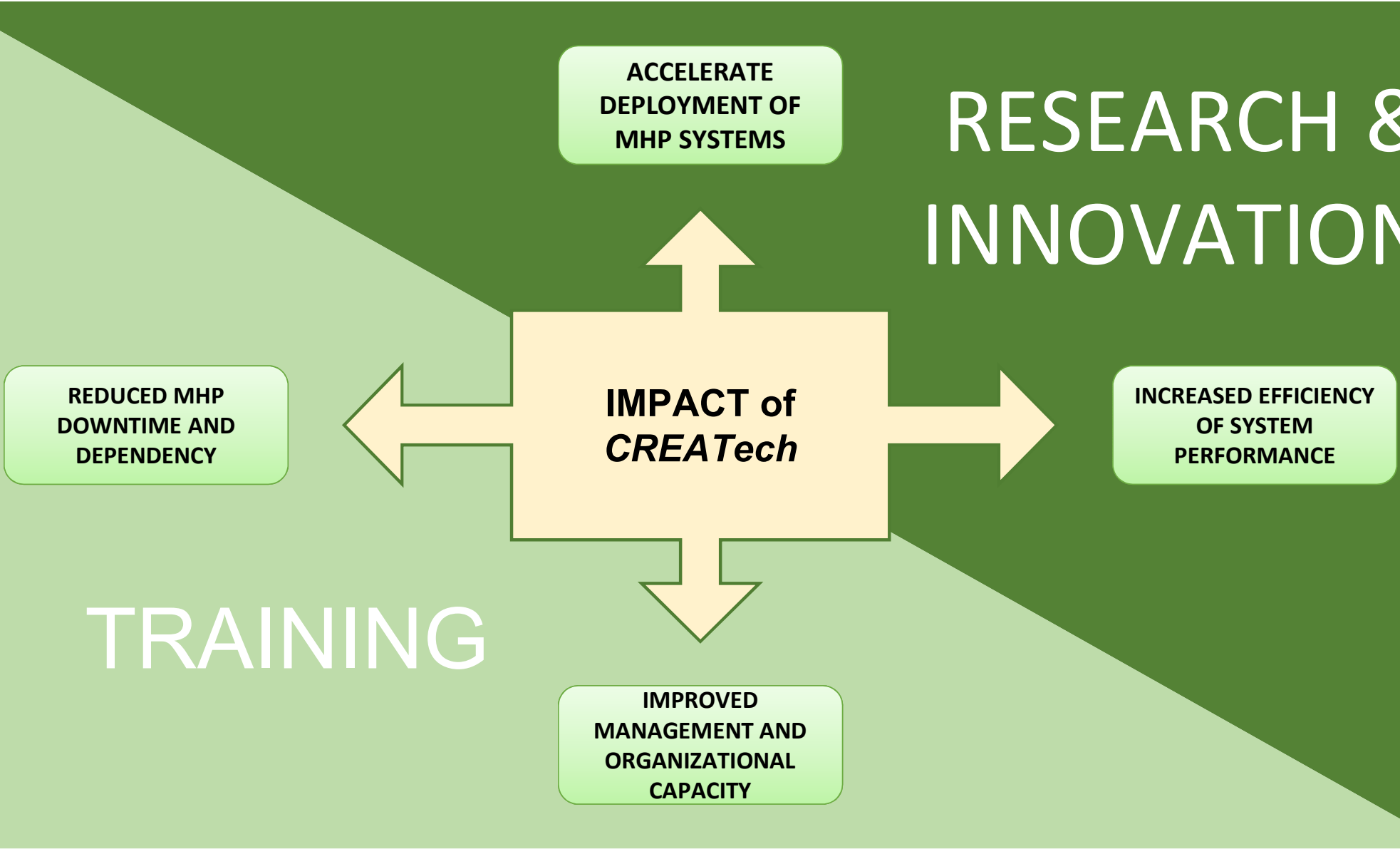
**IMPACT of
*CREATech***

INCREASED EFFICIENCY
OF SYSTEM
PERFORMANCE

REDUCED MHP
DOWNTIME AND
DEPENDENCY

IMPROVED
MANAGEMENT AND
ORGANIZATIONAL
CAPACITY

TRAINING



CREATech's Multi-Stakeholder Approach to Knowledge Exchange

- CREATech manufactures efficient agricultural equipment that are appropriate to the conditions of small upland communities, and that are not available in the market
- CREATech hosts foreign volunteers annually to help in the more advanced aspects of the work, such as wind system, and in the more complicated aspects of MHP development
- CREATech hosts local students (e.g., on-the-job-trainings) to prepare them for engineering careers, giving importance on CBRES development
- CREATech conducts meetings with LGUs, to capacitate the government from Barangay, Municipal up to National levels, by way of pursuing CBRES advocacy, to help us fund the ongoing rehab and upgrading activities of the center.

From CREATech to Community-Based RE Systems



*Thank
you!*



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