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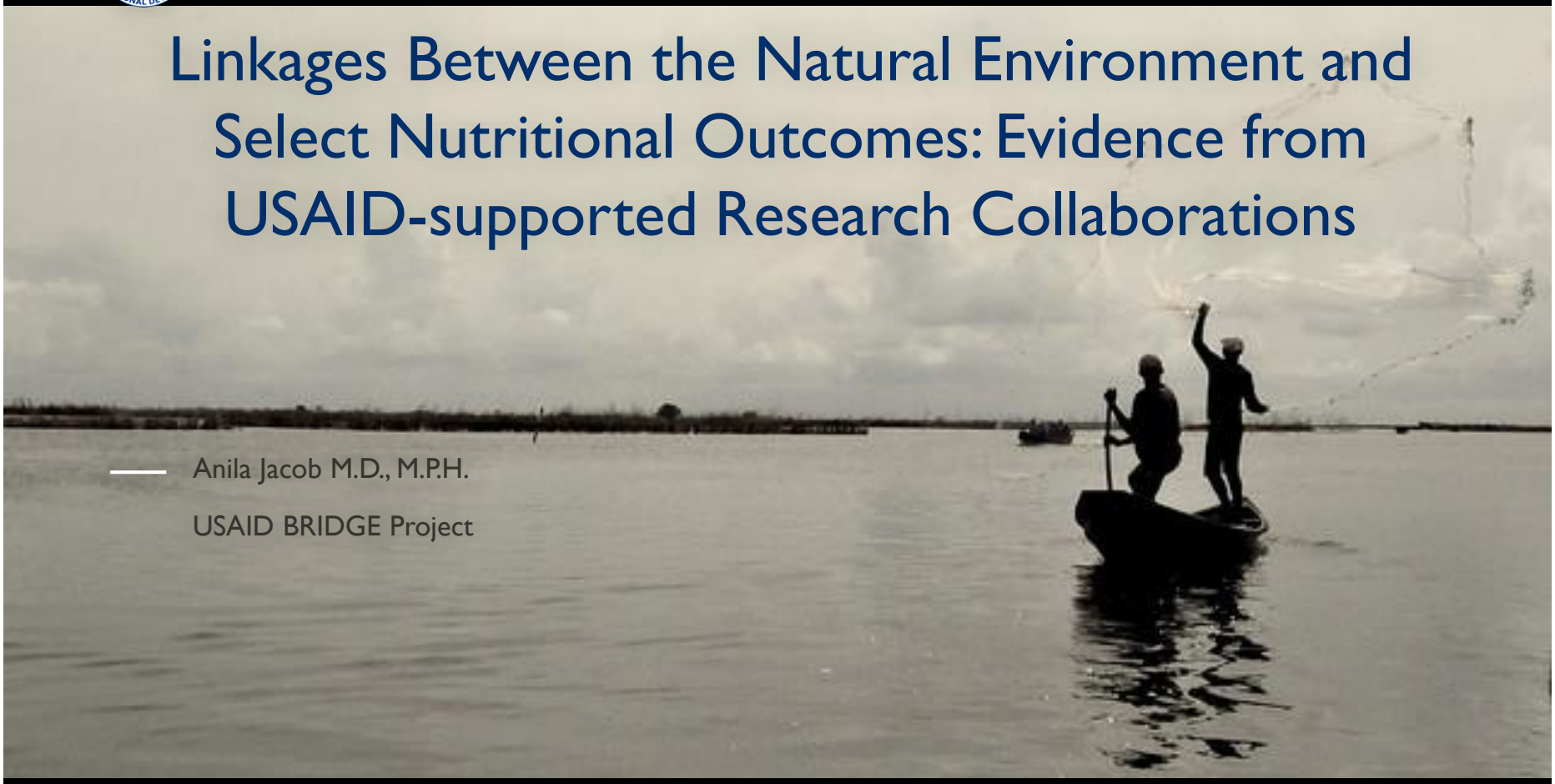
Linkages Between the Natural Environment and Select Nutritional Outcomes: Evidence from USAID-supported Research Collaborations



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USAID BRIDGE Project

Photo: Roberto Maldeno, Lake Nokou, Benin

Presenter Disclosures

Anila Jacob

No relationships to disclose.

USAID BRIDGE

***B**iodiversity **R**esults and **I**ntegrated **D**evelopment **G**ains **E**nhanced*

BRIDGE is a five-year USAID project (2015-2020) managed by the Forestry and Biodiversity Office that supports the Agency and partners to better integrate biodiversity with other key development sectors for improved conservation and development outcomes.

Implemented by Development Alternatives Incorporated, Smithsonian Institution, Relief International, and Conservation International

Photo: Olaf Zerbock

USAID's Support for the Natural Environment

For more than 25 years, USAID has advanced its development objectives through conservation of biodiversity and the natural environment.

- Intact natural systems contribute to multiple development objectives:
  - Food and water security
  - Climate change adaptation and mitigation
  - Improved health
  - Poverty reduction and sustainable economic growth

- In FY 2015, the Agency invested $250 million in 50 countries to conserve species and improve management of ecosystems.

The Natural Environment and Food Security

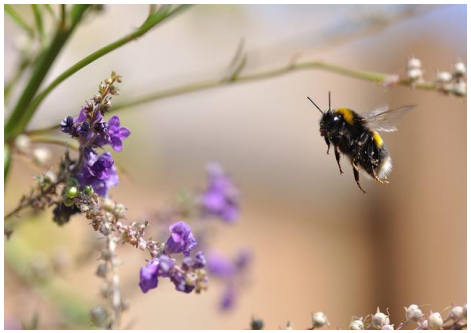
- Forests

- **Forests-** provide groundwater, wild foods, and fuelwood; recycle soil nutrients; support species that pollinate crops and control pests.
- Trend: Forests are diminishing.

- Wild Fisheries

- **Wild Fisheries-** provide aquatic foods, an important source of protein for over two billion people worldwide.
- Trend: Most marine fisheries are unsustainably fished.

- Biodiversity



- **Biodiversity-** pollinators; pest-control; species for direct consumption.
- Trend: Scientists estimate species loss is 1,000 to 10,000 times greater than the natural extinction rate.

Photos: Karen Louise Boothe, Olaf Zerbock, Janet Sharp

2015 USAID Project Highlights

Philippines: an indigenous group received financial training to sustainably manage local fisheries. $350,000 is generated annually from user fees.

Haiti: farmers planted over 145,000 trees on steep hillsides degraded by poor farming practices, improving soil quality & water availability for agriculture.

Senegal: 7,000 women working in the fisheries sector received environmental and business training, leading to higher incomes and more sustainable fisheries management.

Mozambique: local communities planted 100,000 mangrove seedlings to help restore commercially important fisheries.

Forest Cover and Child Nutrition and Health in Malawi*

- Method: Link Malawi's 2010 Demographic and Health Survey (DHS) data with satellite data on forest cover to look for associations between community proximity to forest cover and child nutrition and health outcomes.

Photo: John Willis

- Findings:
  - Children living in areas with net forest cover loss between 2000 and 2010 were 19% less likely to have a diverse diet and 29% less likely to consume vitamin A-rich foods.
  - Children living in areas with higher percentages of forest cover were more likely to consume vitamin A-rich foods and less likely to experience diarrhea.

*Johnson K., Jacob A., and Brown M., 2013. Forest cover associated with improved child health and nutrition: evidence from the Malawi Demographic and Health Survey and satellite data. *Global Health Science and Practice*, 1(2), pp.237-248.

Tree Cover and Children's Dietary Quality in 21 African Countries*

- Method: Link DHS data from 21 African countries with satellite data on tree cover to look for associations between community proximity to forests and children's diet.

- Findings:
  - There was a statistically significant positive relationship between the percentage of tree cover and dietary diversity.
  - Fruit and vegetable consumption first increases and then decreases with tree cover (peak at 45% tree cover).

*Ickowitz, A., Powell, B., Salim, M.A. and Sunderland, T.C., 2014. Dietary quality and tree cover in Africa. *Global Environmental Change,* 24, pp.287-294.

Marine Protected Areas and Children's Dietary Diversity in the Philippines*

- Method: Link Philippines' 2008 DHS data with geo-referenced data of marine protected areas (MPAs) to look for associations between community proximity to MPAs and children's diet

- Findings:
  - Children living within 2 km of a MPA had higher levels of dietary diversity (79%) compared with children living >10 km from a MPA (59%)
  - There were no consistent associations between MPA features such as age or type of management and dietary diversity

Photo: Luca Abbate

* Alva, S., Johnson, K., Jacob, A., D'Agnes, H., Mantovani, R. and Evans, T., 2015. Marine protected areas and children's dietary diversity in the Philippines. *Population and Environment*, pp.1-21.

More Findings

- In countries with productive wild fisheries, fish can contribute more than 50% of animal protein intake.
- Wild foods serve as a safety net food source in times of crisis.
- A study in 22 Asian and African countries found that 90-100 different wild foods were consumed in each country.

Photo: Parshotamlal Tandon

More Findings

- Researchers have found that many micronutrient-rich crops are pollinator dependent.
- In the Asia-Pacific Coral Triangle region, wild fisheries contribute to the food security and livelihoods of over 100 million people.
- A study of land degradation found that 29% of Earth's land surface has been degraded.

Photo: USAID

Conclusions

- A growing body of evidence suggests that healthy natural systems contribute to community nutrition and food security – more research is needed to better understand the underlying causal pathways.

- Natural ecosystems such as forests and wild fisheries are increasingly under threat globally from poor management and unsustainable exploitation.

- Improved protection and management of biodiversity and natural resources can contribute directly to global food security and nutrition.

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Photo: Cuba Gallery

"Protecting ecosystems and ensuring access to ecosystem services by poor and vulnerable groups are essential to eradicating extreme poverty and hunger,"

Mr. Ban Ki-moon—
former UN Secretary General