Linking Faces with kWhs: End-Users Have Names

Village Power 2000

December 5, 2000

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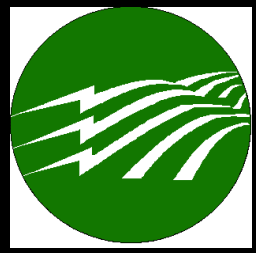
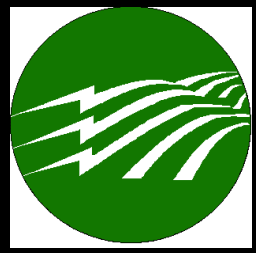
- 2,000,000,001
- 80,000,001
- 750,001
- 2,001
- 1



- The veterinarian syndrome
- Starfish
- Crossing the river



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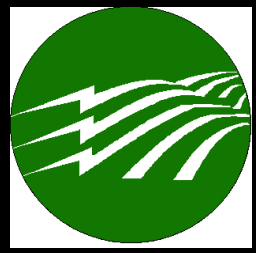
OVERVIEW

- Linking Energy with Rural Development
- Energy and Development Indicators
- 4,000,000,001 faces with electricity
- 2,000,000,001 faces without electricity
- Faces and Interfaces
- One at a time
- Conclusions



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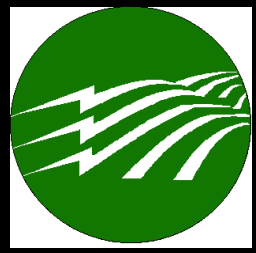
BACKGROUND

- National Rural Electric Cooperative Association (NRECA)
- Founded 60 years ago
- In the USA 1,040 cooperatives serve 30,000,001 people
- Overseas have benefited 50,000,001



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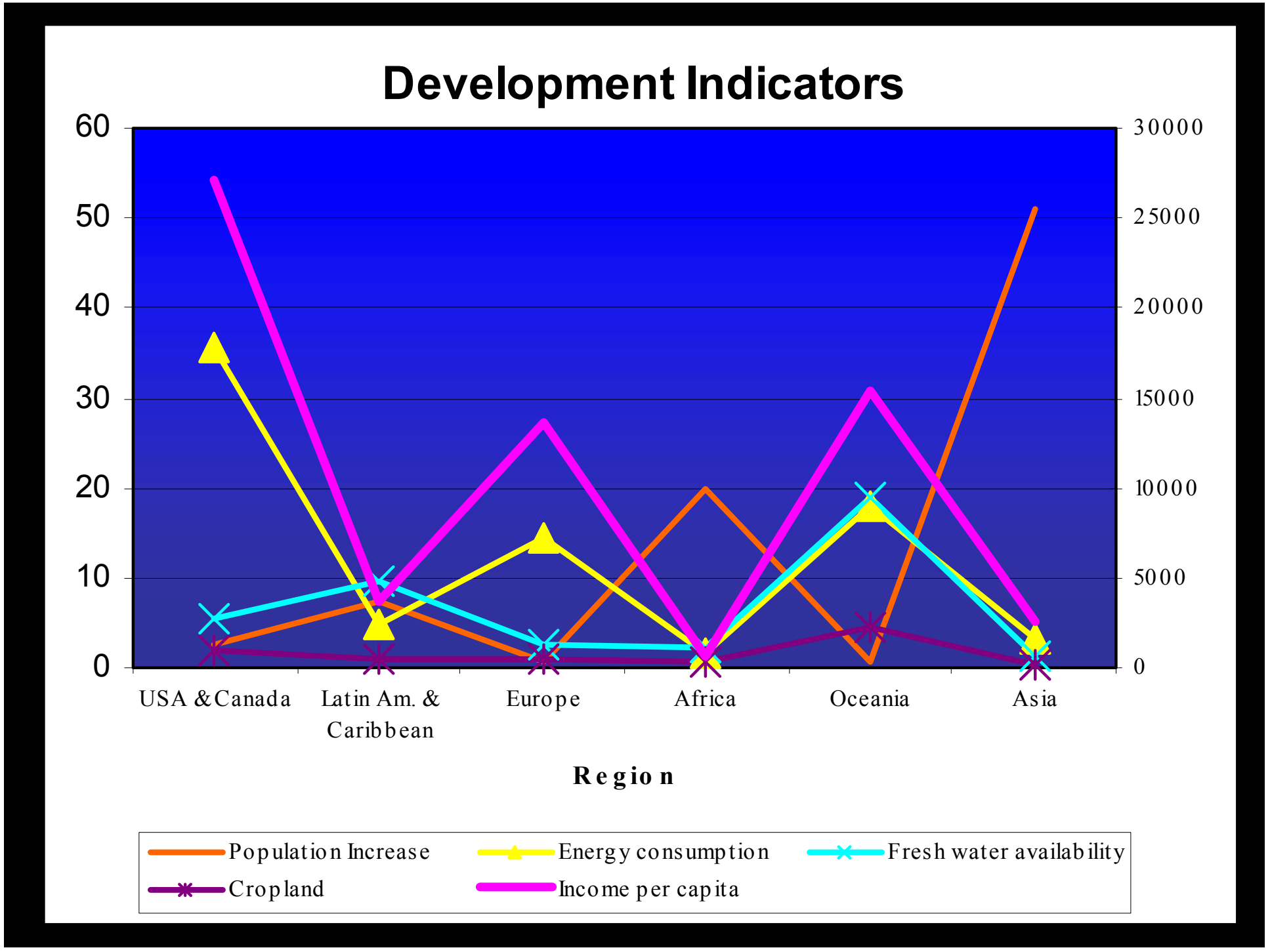
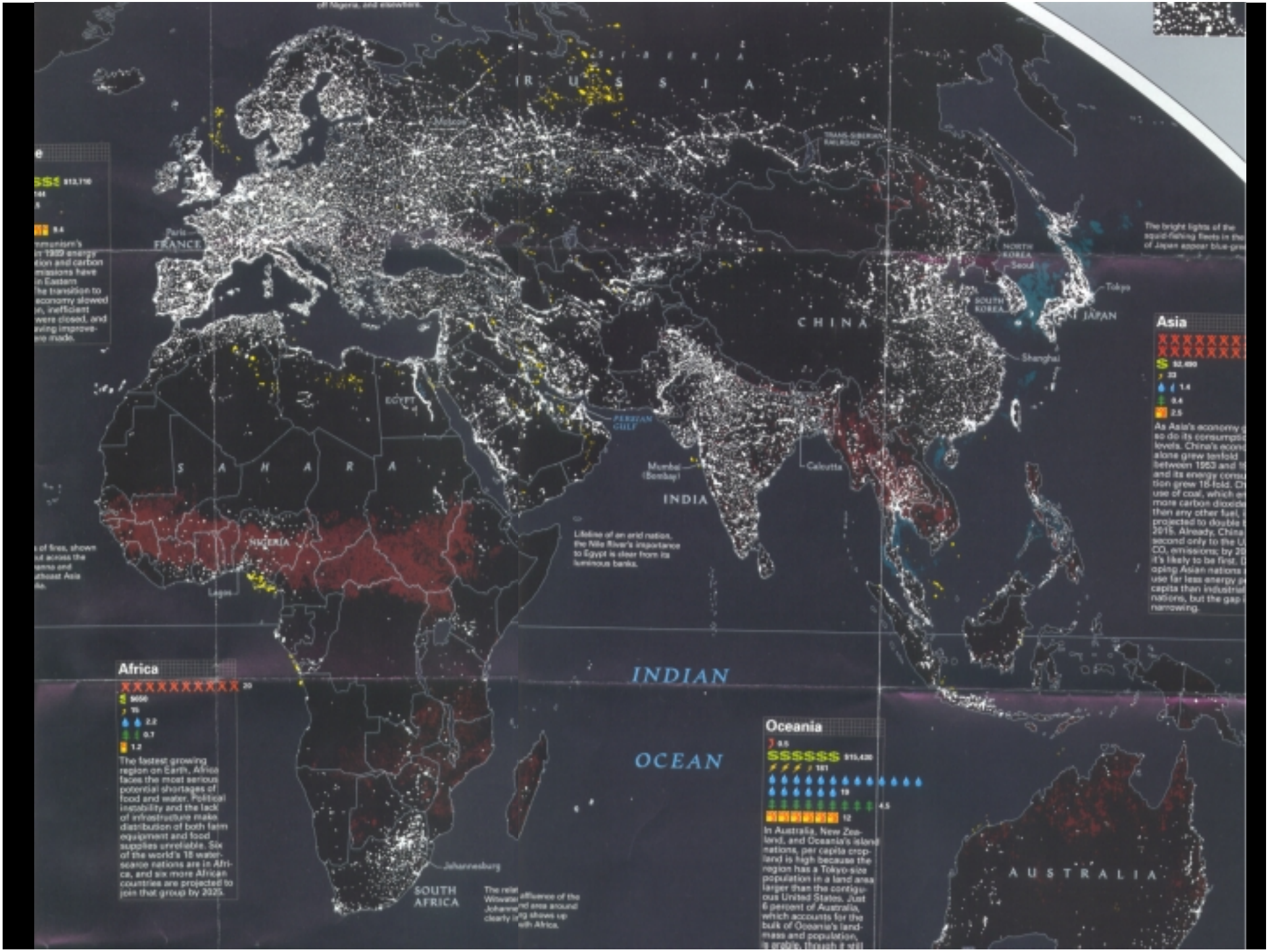

Development Indicators
60
50
40
30
20
10
0
30000
25000
20000
15000
10000
5000
0
USA &Canada
Latin Am. & Caribbean
Europe
Africa
Oceania
Asia
Region
Population Increase
Energy consumption
Fresh water availability
Cropland
Income per capita

Night Lights

"What you learn about electricity from space is illuminating."

-- Adm. Truly


RUSSIA
SIBERIA
TRANS-SIBERIAN RAILROAD
Moscow
Paris
FRANCE
NORTH KOREA
Seoul
SOUTH KOREA
Tokyo
JAPAN
CHINA
Shanghai
EGYPT
PERSIAN GULF
SAHARA
Mumbai (Bombay)
Calcutta
INDIA
NIGERIA
Lagos
INDIAN OCEAN
Johannesburg
SOUTH AFRICA
AUSTRALIA
Asia
Africa
Oceania
Lifeline of an arid nation, the Nile River's importance to Egypt is clear from its luminous banks.
The bright lights of the squid-fishing fleets in the of Japan appear blue-gre
As Asia's economy so do its consumptio levels. China's econ alone grew tenfold between 1953 and and its energy consu tion grew 18-fold. C use of coal, which e more carbon dioxid than any other fuel, projected to double 2015. Already, China second only to the U CO2 emissions; by 2 it's likely to be first. oping Asian nations use far less energy p capita than industrial nations, but the gap narrowing.
The fastest growing region on Earth, Africa faces the most serious potential shortages of food and water. Political instability and the lack of infrastructure make distribution of both farm equipment and food supplies unreliable. Six of the world's 18 water-scarce nations are in Africa, and six more African countries are projected to join that group by 2025.
In Australia, New Zealand, and Oceania's island nations, per capita cropland is high because the region has a Tokyo-size population in a land area larger than the contiguous United States. Just 6 percent of Australia, which accounts for the bulk of Oceania's landmass and population,

“Electricity is necessary but not sufficient.”

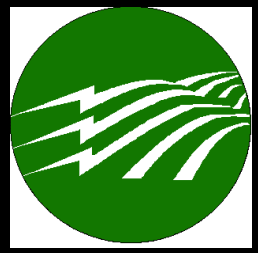
Birth control and electricity.

“There is a disconnect between designers and users.”
– Joy Morgenstern

Starfish

The Faces of Rural Electrification

- End-users
- Local Operators
- Development Partners
- Suppliers, Contractors
- Utilities
- Sequence in Guatemala



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750,001 Families without electricity

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The Faces of the Interfaces

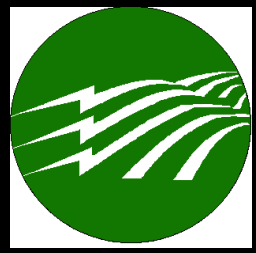
- End-User Surveys
- Organizing Allies and Cooperating Agencies
- Utilities
- Right-of-Ways from Landowners
- Dealing with Contractors
- Operation and Maintenance

The Faces of the Interfaces

- Government of Guatemala
  - Raul Archila
  - Rodolfo Santizo
  - Rudy Najera
  - Benjamin Solorzano
- Utilities
  - Aldo Garcia

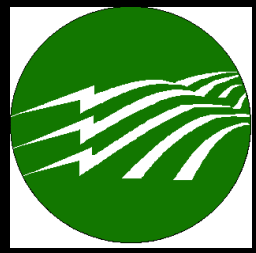
The Faces of the Interfaces

- USAID
  - George Carner
  - Earhardt Rupprecht
  - Robert Kahn
  - Marta Velazquez
  - Zoila Aurora
  - Bernai Velarde
- Development Partners
  - Carlos Set, CARITAS
  - John Lundine, SHARE
  - Mother Antonieta, Clinica San Jose



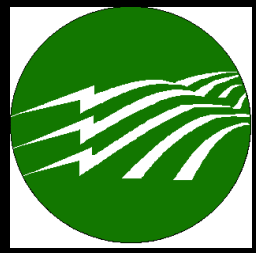
The Faces of the Interfaces

- Local Committees
  - Rosario Ortiz, Juan Pablo II
  - Luciana Ramirez, La Fragua
- End-Users
  - Boca de Yuma, Dominican Republic
  - Riberalta, Bolivia
  - El Triunfo, Guatemala



Riberalta, Bolivia

- Mayor
- Motorcycles
- Military
- Meters



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El Triunfo, Guatemala

Coordinating with End-Users and Development Partners

Colina Mitch, Guatemala

Women and children: Colonia Mitch, Guatemala

Discussing Project Benefits with Potential End-Users

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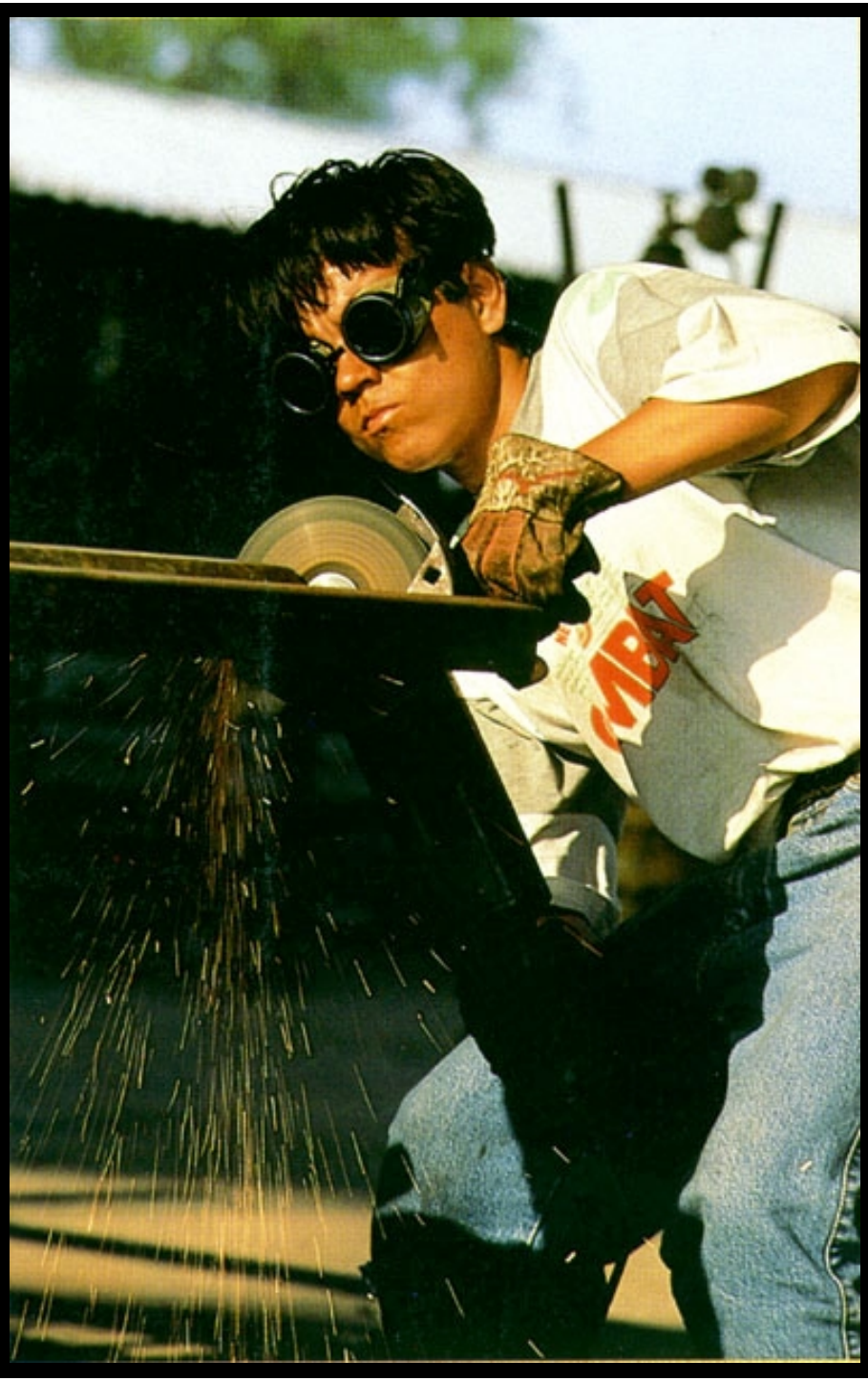

Productive Uses of Electricity

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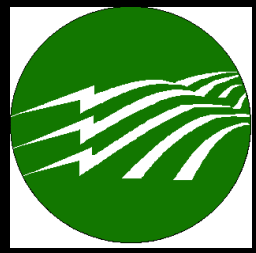
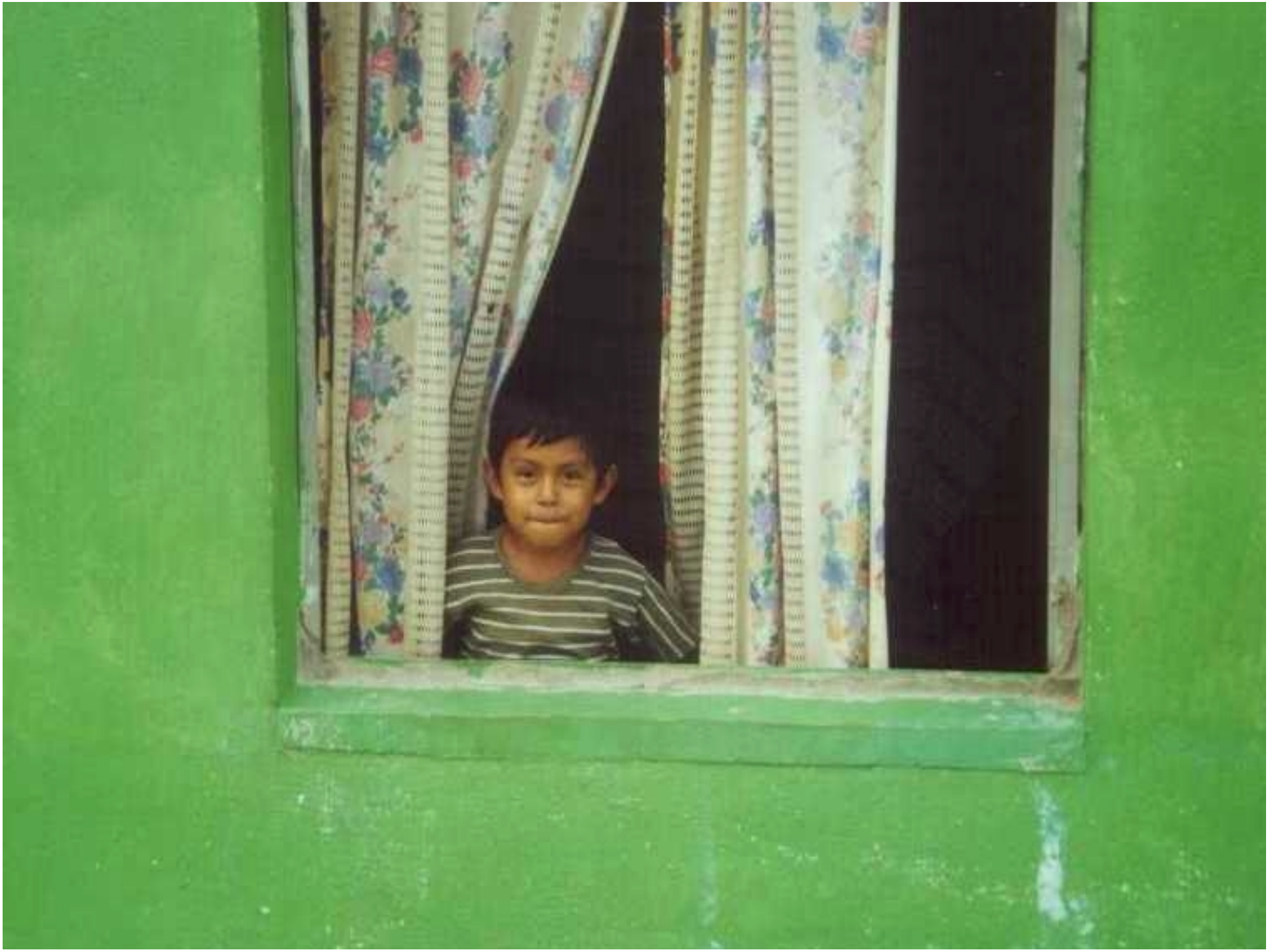
- 500,000,001 people in 10 years – Tugwell
- 500 kWh/yr per capita – Lallement
- Don’t forget to link the faces with the kWhs – Kittelson

Conclusions

- Un-electrified (2,000,000,001)
  - We need to redouble our efforts to get electricity to them
- Electrified (4,000,000,001)
  - We need to redouble our efforts to serve them better
- Let's get on with "crossing the river"