

# Capacity Building for Small-Scale Rural Development

John Kadyszewski  
Winrock International

Phone: (703) 525-9430

Fax: (703) 243-1175

Email: [jkadyszewski@winrock.org](mailto:jkadyszewski@winrock.org)

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# Summary

- An onion farmer in Indonesia
- To grow the market, we must expand the ability to pay
- Stories from Indonesia and India



# An Onion Farm in Indonesia

- Area—0.065 hectares (7000 square feet)
- Labor required—1040 hours per season hauling water to bring crop to harvest
- Value of crop—US\$ 550



An onion farmer displays his crop.

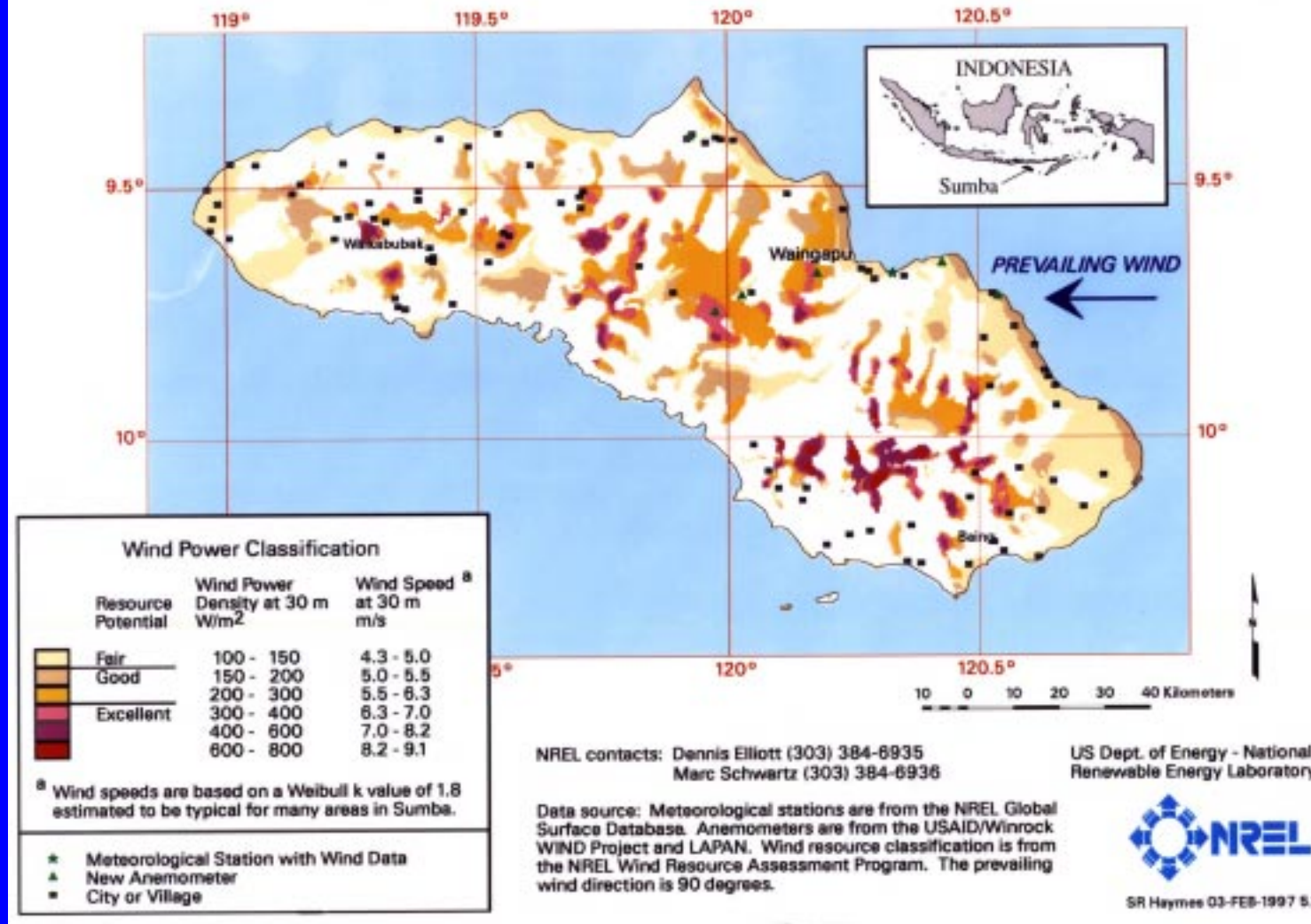
## Selected Islands Of Southeast Indonesia - Elevation Map



Source: NREL



## Sumba, Indonesia - Favorable Wind Resource Areas



# Pumping Water with a Windmill

- Labor required—  
100 hours per  
season
- Value of crop—  
US\$ 2200



The onion field and wind tower.



Children of onion farmer now attend school.



*Who are the 2 billion  
people in the world  
without electricity?*







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# Winrock Perspectives

- Insufficient funds to subsidize everyone
- Subsidies difficult to manage and can lead to corruption
- Private capital essential for renewable energy market development
- Surveys of willingness to pay show demand
- Fastest way to grow market is by expanding the ability to pay



# Expanding the Ability to Pay

- Identify regional comparative advantage
- Introduce more efficient production techniques
- Assist with marketing and quality control
- Improve access to credit
- Build local capacity and infrastructure



# Building Local Capacity

- Use and strengthen existing institutions and companies
- Engage local organizations to improve policy environment
- Attract companies to new markets and provide continuing business support
- Support local NGOs to help develop markets



# Reduce Transaction Costs

- Establish viable enterprise models
- Build market to stimulate demand for local distributors
- Enlist local NGOs and community leaders in training and skills development



# Create Models at Two Levels

- Individual enterprises
- Market for products





# Fishing in Indonesia

- Location—  
Eastern Islands
- Individual enterprise—  
fisherman
- Infrastructure needed to  
transport fish to market



An Indonesian fisherman  
with his catch.



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# Program Concept

- Increase value of fisherman's catch
- Produce ice for fish preservation
- Organize transportation to market





# Pest Control in India

- Location—  
Southern India
- Enterprise—  
farmer
- Farmers need more  
effective methods for  
pest control



Villagers with lanterns.



Farmers prepare to set the solar lanterns.



# Program Concept

- Increase agricultural productivity and profitability
- Reduce crop losses
- Replace pesticides with solar lanterns



# Trial Results

- Lanterns tested in 40 hectare trial area
- Reduced losses from 50% to 4%







The old and the new methods of moth control shown in art.

# Fruit Production in Indonesia

Location—

Eastern Islands

Individual enterprise—  
fruit production

Infrastructure needed to  
access market and  
transport fruit to market



Timorese fruit farmer cutting his second harvest of mandarin oranges.

# Program Concept

- Regional conditions optimal for fruit production
- Identify fruit buyers in premium market
- Select fruit varieties and develop local production infrastructure
- Develop credit mechanisms with local banks
- Provide training in packaging and quality control
- Develop transportation infrastructure





Most orange trees are planted in villagers' garden or yard.





Timor's mandarin oranges command premium prices.





Mandarin oranges packed to be shipped to buyers in Java or Bali.





Fruit distributors attending a training session.





Boxes of fruit being  
lifted up onto the deck of  
the passenger ship  
Dobonsolo.







20-foot refrigerator container on the Dobonsolo.

# Energy Inputs

- Water pumping for drip irrigation
- Cooling for fruit preservation



# Summary—Winrock Program Concept

- Target markets where small amounts of energy will increase income
- Reduce transaction costs by developing local capacity
- Technical assistance to assure income growth



# Provide Continuing Enterprise Support

- Business planning
- Marketing
- Quality control



# New Role for Public Institutions

- Set development priorities
- Create enabling environment
- Reduce credit risk





Local boys help with irrigation.

