

# Incorporating gendered landscapes into physically-based models via Participatory 3-D Mapping

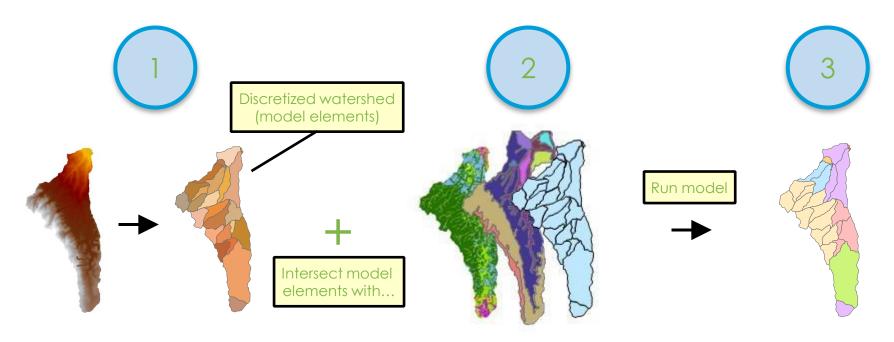
Dr. Tracy Baker - Researcher, Hydrology & Hydrologic Modeling
Dr. Liza Debevec - Social Scientist Ms. Yenenesh Abebe - GIS and Database Management
International Water Management Institute - East Africa & Nile Basin

**Dr. Beth Cullen** - Social Scientist

International Livestock Research Institute - Ethiopia



# Hydrologic model



Watershed delineation & discretization from DEM

Land cover, Soils, Weather

Visualize / Analyze Results

How to reconcile the biophysical with the social?



- Local knowledge identifies most important resources
  - Necessarily points out ESs
  - Connected to livelihoods
- Takes many forms (2D, 3D, drawing, community measuring, GPS)





## **Caution**

- Who participates and why?
- Maps contain private information
- Have potential to empower or marginalize



### Important Differences

622	584
389	353
627	703
10.3	8.5

- Males identified
  - 11 Springs
  - 6 Sacred Trees
  - 3 Sacred Sites
  - More grazing land
  - More fertile soils
- Females identified
  - 15 Springs
  - 3 Sacred Trees
  - 4 Sacred Sites
  - 2 Holy Water Sites
  - 4 Quarries
  - More degraded & less fertile soils

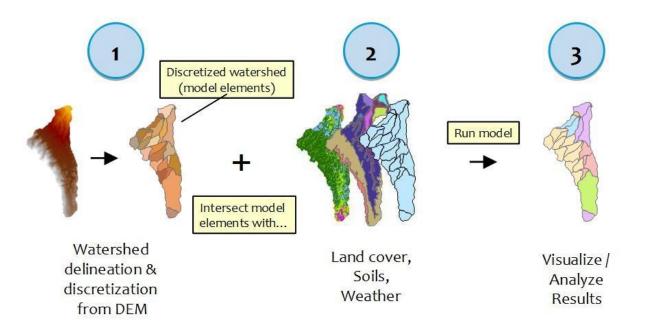


### Use models to ...

- Evaluate multiple perceptions of landscapes and quantify impact on ecosystem services
- Assess how alternate future climates, land use, and attendant hydrologic response will impact ecosystem services as *valued by communities*

### Explore:

- Focused Site(s) for evaluating models
- Identification of ESs at multiple scales
- Alternative climate and land use scenarios



Run many scenarios

10 - 20 yr Management







If you're not on the map ... then, you don't exist!



Agriculture and Ecosystems Blog
Improved natural resource management for livelihoods, food security and the natural environment

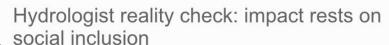
HOME ABOUT ECOSYSTEM SUSTAINABLE RIVER BASINS INSTITUTIONS GENDER EVENTS

Q

http://wle.cgiar.org/blogs/ Search:

Hydrologist, Gender

Contact: t.baker@cgiar.org



Twitter 31 Facebook 41 The LinkedIn 8 Email W Press This

NOVEMBER 25, 2013 BY TRACY BAKER

Featured, Gender, IWMI

I am a hydrologist. And I'm intrigued by the opportunities I see to incorporate gender into biophysical models.

To many of my hydrology colleagues it may sound like I should be standing up at a self-help meeting if I am going to make such proclamations. After all, we're concerned with the physical and quantifiable world. A world governed by physics, a world where variability and uncertainty are still somewhat quantifiable and predictable. Precipitation, streamflow, runoff, evapotranspiration, and groundwater. These are all measurable, and predictable, inputs and outputs of a system we call the water cycle. When we are asked about how we understand this system, it is quite simple: physics.



Twitter

Facebook

Youtube

RSS Feed

Contact Us

Subscribe to the Blog





# **Are you convinced?**



# Messages

 Getting the right information to the right people

Closing the data gap







### **Fact Check**

- 70% of the 1.3 billion people living below poverty line are women
- Closing the gender gap between men & women could reduce the # of undernourished people by 100-150 million
- Women produce over half of all food grown in the world



Bringing men and women together to reduce hunger and support livelihoods

### Many women lack access to:

Latin America



day collecting water 4

Often, women must grow food on degraded, smaller plots than those owned by men 5

### Credit

Women in Nepal spend 30% of their

In Kenya, women represent 48% of business owners only 7% receive credit 6

> Indonesia: women receive 12% of credit

3% is for agricultural investments

#### **Education**

Achieving gender equality in education

increase farm vields by 7-22%°

75% sub-

Saharan Africa

#### Services

Only 5% of the resources provided through extension services in Africa are available to women 9

South Africa: less than 7% of community water managers are women

### Women . . . a key piece of food security







If women had the same access to resources as men, farm yields could increase 20-30% and reduce hunger 12-17% in developing countries<sup>12</sup>

