University of Oklahoma
International WaTER Conference
September 23, 2013

Sustainable Development Extension Services

Community empowerment through proactive participation, leadership and collaboration to alleviate poverty and achieve sustainable self sufficiency.

Stephen Forbes, PhD., P.E., P.G.
Poverty (SuDeX)

• Poverty - lack of sufficient resources to purchase basic needs for health and welfare of self and family, and prevent premature death from preventable diseases.

Basic needs to survive
(adapted from US Census)
– Adequate healthy diet
  – Water (quantity and quality)
  – Sanitation and hygiene
  – Health care
  – Shelter and clothing
  – Energy

Basic needs to be sustainable
– Basic needs to survive
– Self Reliance/Self Sufficiency
  • Opportunity
    – Education/vocational training
    – Information
    – Employment/Entrepreneurship
    – Financing
    – Markets
      • safe efficient mobility
Poverty is not a modern phenomenon

- Poverty has been the dominant social class throughout history (Maddison)
  - chronic malnutrition has been the norm. (Fogel.)
- All cultures have been plagued with poor health, disease, and wars from time immemorial
- Much has changed; some has improved, more has stayed the same…it would seem that poverty is sustainable.
- SUDEX HOPES TO CHANGE THIS
Different Wake up Call

• Above the poverty line:
  – Adults wake up to seek ways to increase income to increase financial security, conveniences, comfort, entertainment, and discretionary time.
  – The children go to school to prepare for the same pursuit. Success means to reach goals.
  – Survival is a matter of maintaining sufficient income.

• Below the poverty line:
  – adults and children wake up to go in search for water, firewood, food, and work for the day.
  – Children go to school as best they can—if at all.
  – Success means to make it through another day.
  – Survival can be matter of life and death.
## Sustainable Development Extension Planning (SUDEX)

Community Mobilization Through Proactive Community participation and leadership

- Empowerment, Capacity building, representative governance,
- Access to information; nexus to resources
- Respecting culture; building trust, restoring dignity and self esteem
- Ability to sustain, willingness to pay

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Action Plan</th>
<th>Improvement</th>
<th>Sustainability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Needs</td>
<td>Objective</td>
<td>Accountability</td>
<td>Stable secure governance</td>
</tr>
<tr>
<td>Cause &amp; effects</td>
<td>Strategy &amp; Tactics</td>
<td>Performance Matrix</td>
<td>Transparency</td>
</tr>
<tr>
<td>Community Mapping</td>
<td>Budget</td>
<td>Feedback/follow up/through</td>
<td>Community Participation</td>
</tr>
<tr>
<td>Resources</td>
<td>Schedule</td>
<td>Continuous</td>
<td>Checks and balances</td>
</tr>
<tr>
<td>Priorities</td>
<td>Implement</td>
<td>Education</td>
<td>Economic Base</td>
</tr>
<tr>
<td>Feasibility</td>
<td>QA/QC</td>
<td>Passing on the lessons</td>
<td>Self Sufficiency</td>
</tr>
</tbody>
</table>
Synergistic Alliance through Team Work

**SUDEX**
- Nexus of Consilience
- Experts
- Information
- Mediation

**Community**
- Strategy
- Policy
- Direction
- Leadership
- Decisions
- Input
- Confirmation
- Support

**Extensionalist**
- Tactics
- Facilitator
- Coordinator
- Guidance
- Options
- Information
- Feedback

**SUDEX — Nexus of Consilience** — Experts — Information — Mediation

- Learning
- Teaching
- Sharing
- Building
- Improving

**Learning**

**Teaching**

**Sharing**

**Building**

**Improving**
Technology alone is not the solution, nor is it the most difficult.

- Concept of appropriate technology is well known, but not well understood...as often as not applied inappropriately.
- In thinking outside the box, we should not forget what lies inside...as likely as not—the solution.
- It is a common and major mistake not to listen to the villagers...invariably indigenous wisdom is superior to ours relative to their own set circumstances...but
- Indigenous wisdom is not sufficient to assess technical needs.

Inappropriate technology is part of the problem
When and where is technology appropriate?
The windmill that never turns.
If these wells were needed, would they be in this state?
It’s not that we don’t care; we just don’t manage properly!

DON'T URINATE HERE
U STUPID FOOL!!
Sustainable Development Extension Strategy
Two Phases to Eradicating Poverty

1.0 Immediate financial relief to ensure attainability of basic needs for survival until self sufficient (Easterly and Sachs, MVP)

- Food
- Water
- Sanitation
- Agriculture
- Health Care
- Shelter
- Energy
- Education

Only as sustainable as donors are committed

2.0 Sustainability can only be achieved when community self sufficient

Community mobilization (empowerment)

- Proactive participation and leadership
- Reliable information
- Appropriate Technology
- Strategic Planning
- Accountability
- Continuous improvement

Opportunity (capacity building)

- Education
- Vocational training
- Employment
- Entrepreneurship
- Financing
- Tool kit of ways and means
Community Driven Needs Assessment
Community Mapping

- Location
- Layout
- Topography
  - Drainage
  - Soils
- Water
  - Surface
  - Groundwater
  - Quality
- Energy
- Food
- Roads
- Transportations
- Physical hazards
- Local Resources

- Demographics
  - Family Structure
- Political structure
  - National
  - Regional
  - Local
  - Administration and institutions
- Culture
  - Traditions
  - Taboos
  - Myths
  - Religion
- Financial structure
  - System
  - Resources
- Opportunities
  - Access to information
  - Education
  - Jobs
  - Market
  - Financing
  - Entrepreneurship
Objective considerations

• Fills need
• Priority
  – Short term
  – Long term
• General Consensus
• Variations and interim possibilities
ACTION PLAN

• What
• Who
• How
• Where
• When
• Accountability
• Feasibility
Output:

- Prioritization - which actions will do the most good in the shortest period time (reducing identifiable environmental impacts and unintended consequences in a cost effective and efficient schedule).
- Internal Benchmark - the ultimate goal with which to gauge progress and improvements.
- Performance guide – measurements to be used to assess improvements.
- Continuous feedback until optimum solution for the community is obtained.
Performance Measurement

• What gets measured gets done
• Accountability
• Scoring
• Feedback $\rightarrow$ Followup $\rightarrow$ Follow through
• Adjust, revise and improve
Sustainability

- Self reliance
- Self Sufficiency
- **Opportunity**
  - Access to information
  - Education
  - Vocational Training
  - Business
  - Employment
  - Access to financing
- Property rights
- Community General Fund

- Willingness to contribute
- Willingness to pay
- Continuous Assessment, Revisions and Improvement
- Success building upon success
- Follow-up
- Follow through
Passing on the knowledge

• Model of success
• Workshops
• Training the trainers
• Incentives
• Followup
• Diffusion of innovation $\rightarrow$ Scalability
  – Geometric progression building on success
You must first walk the path of those you would know, before you can walk the talk.

Trust is built by staying the course.
Given opportunity, entrepreneurship will prevail.
Housing

Drainage and Erosion

Housing
Living Quarters for families of 5 to 18
In need of medical care

Guinea Worm
# Walking a day in their scandals

## Woman’s Day

- Up at 4-6 prep food (2-3 hours), fetch wood (2-3 hours); water (2-3 hrs), fetch food from family farm (2-3 hrs), idle (4-7 hours), mill food, prep fufu
- Retire at 8 pm
- not enough money for food
- Rarely go to market, although a few sell dried fish, snails, etc.
- All would like to get a job.
- Typical illnesses, malaria, diarrhea, measles
- Husband determines when to go to doctor
- >99% born and raised in village
- Approx. 50% leave village
- 50% married 18-20 yrs
- 1st child 18-20
- Last child 35-40, 3-7 children
- Rare to lose child at birth
- Life expectancy 65+yrs.
- Average household 5-12 living in one room dwelling

## Man’s Day

- Up at 4:30-6: Farm job (9 hrs-6 months out of year); return to work on family farm (2-3 hrs).
- Home for the evening.
- When no farm work, work on own farm (6 hours in morning 3.5 hours in the evening)
- Retire 10 pm
- 50% have farm job (pineapple approx. 200 days/yr at 5 cedis per day (~$3.50/day; $1.91/day/year). The other 50% lives off of subsistence farming.
- Work every day on own farm.
- 67% leave village for jobs in city
- Illnesses malaria, high blood pressure, prostate, TB, blindness common with age.
- Marry 18-20 years
- Life expectancy 60-70 yrs

## Youth (10-17)

- Hours similar to adults
- Fetch water and wood, some help mothers sell, and work on farms
- Typical kids interests although boys seemed to be more sensitive to girls’ needs
- School system, similar to US, but while most go through 6th grade, unusual to go past 6th (no HS in Obodan, closest Aburi).
- Education supposed to be free, but students can only go to HS through hard work, family support and usually some form of outside support.
- Mostly starch diet
- 2 meals a day due to cost
- M:F ratio 2:1
Participatory Community Development Planning

Adapted from Chambers and Pilgrim; modified by community (Obodan).
IDENTIFYING THE VISION OF OBUDU COMMUNITY

1. Community Center
2. Market
3. Computer Center
4. Checking Erosion
5. Job opportunities
6. Sports stadium
7. Boys Senior High School
8. Community Clinic
9. Post Office
10. Street Drainage
11. Street lights
12. Electricity meter
13. Animal clinic
14. Agri Inputs Shop
15. Church
16. Hotel
17. Police Station
18. Hospital
19. Bank
20. Library
21. Water
22. School & Supplies
23. School Bus
24. Community Bus
25. Training College
26. University
27. Storage Facilities
28. Palace
29. Teachers' Bungalow
30. Public Toilet
31. Football Team
32. Recreation Center
33. Farming Assistance Financially
34. Afforestation
35. Swimming Pool
BASIC NEEDS

1. Medicine
2. Health clinic
3. Cleaning of K.I.V.P
4. Waste Bin
5. Waste Management
6. Clean Water
7. Job opportunities
8. Water Distribution
9. Access Roads
10. Food
11. Health Insurance
12. Toilet individual houses
13. Maintenance
14. Money/loan
15. Street lights
16. Market
17. Community Center
18. Clothing
19. Roofing sheets
20. Job Training
21. Education
22. Agric extension Service
23. Bibles
Opportunity

Jobs
Business/entrepreneur
Money/loans
Information/computers

Education
Boy HS
Adult education
Vocational training

Community

Facilities
Health centers

Opportunities
Church
Bank
Community center
Library
Post office

Facilities
Health clinic
Nutrition
Sanitation
Hygiene

Shelter/clothing
Waste management
Individual latrine

Facilities
Marketing
Public latrine
Hospital/clinics
Recreation center
Infrastructure

Water Distribution
Latrine Waste Management
Energy/Electricity
Street Drainage & Maintenance
Erosion Control
Security/Police Station
Transportation
EMS

Participants/Stakeholders

GOI + Institutions
National
Municipal
District
NGO

Community
Leaders
Chiefs
Elders
Queen Mothers
Church
Education
Professional
Proactive Citizens
Inactive Citizens

Stakeholders
Elders
Women
Youth
Disability
Elders
Oral history.
Youth

Getting a sense of the future (it is vibrant, intelligent, and full of hope.)
Municipality (District) Planning and Engineer (Important resource and support.)

Kwadwo has his say; the disabled can not be ignored.
Recapping and preparing for the next step.

The SUDEX PLAN
<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
<th>III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinic</td>
<td>Nutrition</td>
<td>Clean Water</td>
</tr>
<tr>
<td>- Individual Clinic</td>
<td>Sanitation Bank</td>
<td>Hygiene</td>
</tr>
<tr>
<td>- Health Insurance</td>
<td>Medication</td>
<td>Waste Mgmt</td>
</tr>
<tr>
<td>- Community Ctr</td>
<td>Energy</td>
<td>Church</td>
</tr>
<tr>
<td>- Market</td>
<td>Electricity</td>
<td>Library</td>
</tr>
<tr>
<td>- Jobs</td>
<td>Police Station</td>
<td>Post Office</td>
</tr>
<tr>
<td>- Water Sys.</td>
<td>Business Office</td>
<td>Recreation</td>
</tr>
<tr>
<td>- Boys H.S.</td>
<td>Money/Loans</td>
<td>Soccer Ctr</td>
</tr>
<tr>
<td>- Street Maint.</td>
<td>Adult Ed.</td>
<td>Public Latrine</td>
</tr>
<tr>
<td>- Erosion Control</td>
<td>Vocational Training</td>
<td>Hospital</td>
</tr>
<tr>
<td>- Information/Computer</td>
<td>Transportation</td>
<td>Ems (se)</td>
</tr>
</tbody>
</table>

- School Bus
- Play ground
- Sports equipment
Community Development Plan

Objective: Way, $MEANS, and schedule to obtain necessary resources to meet objectives and implement

Objective I - Primary Needs

Objective II - Secondary Needs

Objective III - Achieve sustainable self sufficiency

Objective IV - Continuous Improvement

Diagram:

Objective: OR as 4 SR

OR = Outside Reliance
SR = Self Reliance
OR' = Obodan provides External Assistance to Neighbors
Feasibility

Objective

1. Resources Available
   - Cost
2. Implementability
   - Willing to Pay
5. Re Assess

If Community Vision = 100 and Current State = 50 Take Action to Score

What get measured get done

Accountability

Transparency

Indicator Parameters

Score

Meeting goals within budget and on time

Yes, continue

Stakeholders

Development Committee

Determine why, take appropriate action
Proactive Community participation and leadership is the critical component, often over looked or ignored by those who seek to help, and consequently the root cause of many failures.

Commitment results with active and appreciated participation in decision process. Decision makers tends to ensure their decisions are implemented and maintained (which sometimes makes it difficult to change.)

The community does not need outsiders to tell them what their problems are;

• But it can use some help identifying practical sustainable solutions, and the tools and funds to implement them;

• Armed with creditable reliable information and tools they can decide on the appropriate solution for themselves.

JUST LIKE YOU AND ME
Medaase
Krup Khun Krup
Yoga Do
Aw Kohn
Mucho Gracias