Community Responsive Research

A Presentation

at

AWARD Role-Modeling Event

("Community Impact of Bio-fortified Food Crops in Nigeria")

By

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Basic Definitions

COMMUNITY

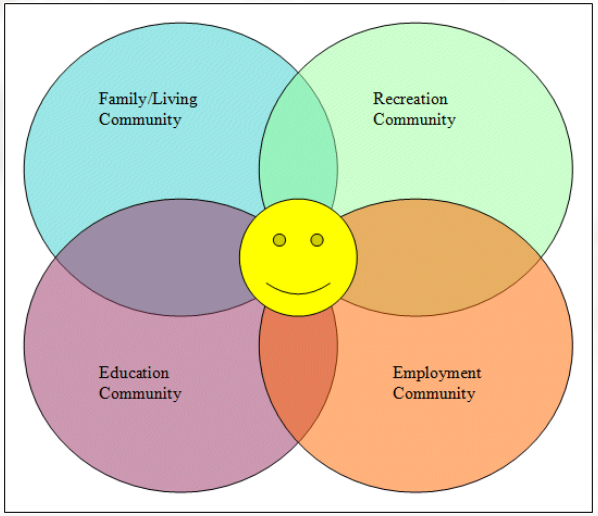
A group of people or a social unit living in the same place or having a particular characteristic in common.

RESPONSIVE RESEARCH

A research responsive to public needs.

OR

A research designed to meet the obvious needs of a given society or community.



Picture courtesy : www.sngresearch.com

Basic Definitions (Contd.)

COMMUNITY RESPONSIVE RESEARCH

A research designed to solve an identified problem such as micronutrient malnutrition (the lack of essential vitamins and minerals in people's diets) in a given community.

MICRONUTRIENT MALNUTRITION (MM)

Current research efforts on MM include biofortification "the process of adding nutritional value to a crop" (Montagnac *et al.* 2009); this is in contrast to "fortification," where nutritional value is added to a processed food product.

What is the scope of MM?

MM (Iron, iodine and vitamin A deficiencies) is a world-wide problem especially in Africa.

Vitamin A deficiency: Over 3 million children have visible eye damage. >300,000 go blind yearly and 2/3 die within months of going blind.

Iron deficiency: Over 3 billion people are iron deficient due to low iron intake and blood loss.

Zinc deficiency: extent & clinical symptoms not very clear; poor hair growth is a visible symptom.

Iodine deficiency: Over 2 billion people live in iodine deficient areas. It is a major preventable cause of brain damage and mental retardation. **A leading cause of intellectual impairment in the world.**

Mild iodine deficiency causes goiter,.

Why bio-fortification and not just food fortification or vitamin pills?

Bio-fortification is self-perpetuating

Once the plants have been created the farmers can keep on planting them.

Effective in remote rural areas

Seeds can be distributed to rural areas.

Not dependent on political forces/budgets

Distribution of vitaminpills has to be authorized/paid for by international organizations or governments. Many developing countries lack the infrastructure for distribution.

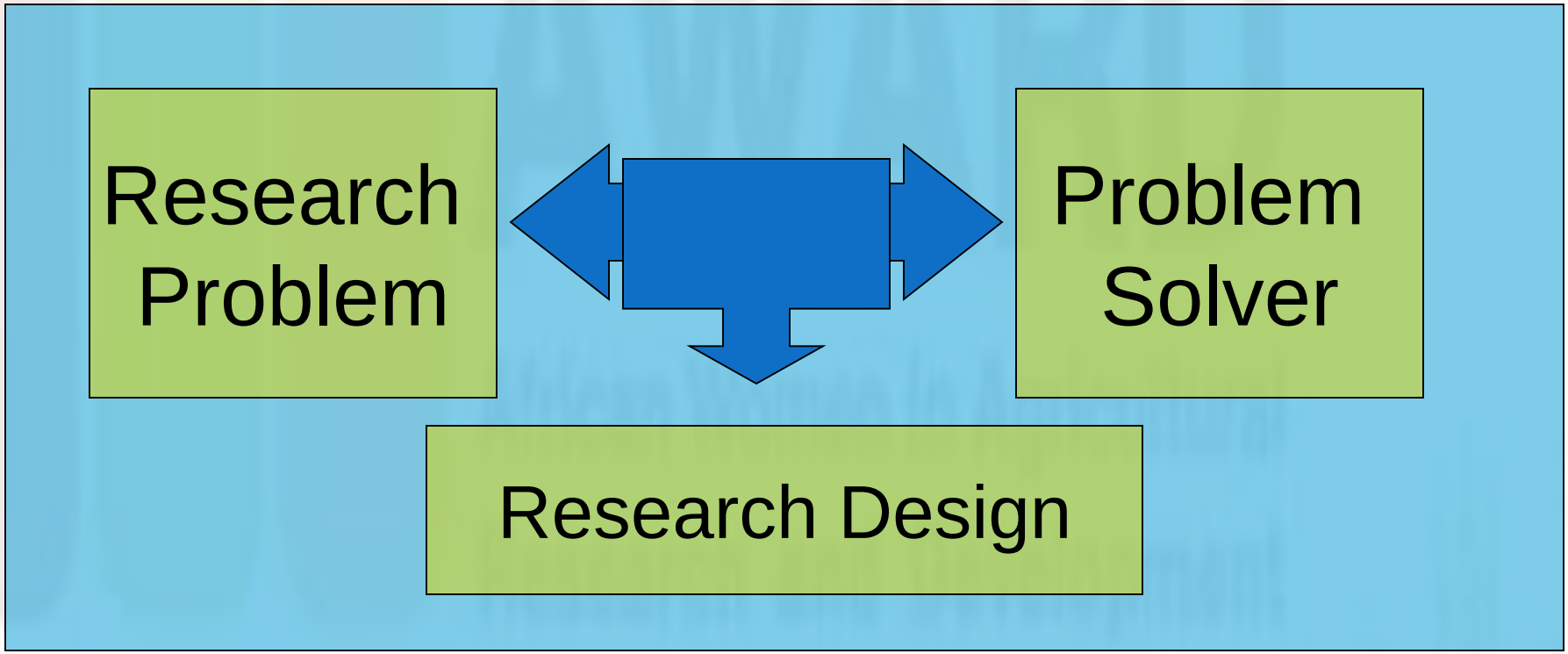
More cost effective

Cost of supplementation is continuous and cost of creating the plants is one-time.

Motivation of Research: What makes people undertake research ?

- Desiring solution to the problem/ hazard
- Desire to do a social / national / organizational service
- Inner satisfaction from the results
- The hardest part of doing research is the plan the time it takes to produce a good plan

Principal Components of Research Proposals (Plans)



Research Problem/Objectives

- Identify the problem of interest
- Clearly write your own 'angle' on the problem
- Clearly state the reason behind your proposal
- Clearly state your hypotheses
- Specifies the condition(s) you want to change
- Show support from previous research on the topic (results, publish paper) if any
- Specify the outcome of your project

Literature Review

- Recent and historically significant research studies on the problem
- Always refer to the original source
- Discuss how the literature applies, show the weaknesses in the design, discuss how you would avoid similar problems
- Where is your position on this issue?
- How is your idea different/better?

Importance/Benefits of the Study

- Importance of the doing the study
  - Time and Place, Facilities
- What are the potential impact on
  - Research community?
  - Applications community?
- If you find this difficult to write, then most likely you have not understood the problem

Research Design

- What you are going to do in technical terms.
  - May contain many subsections
  - Be specific about what research methodology you will use and why
  - Provide details of your proposed solutions to the problem and sub-problems
  - Provide information for tasks such as sample selection, data collection, instrumentation, validation, procedures etc

Writing Tips for Research Design

- **Begin with your objectives**
- **Describe the precise steps you will follow to carry out each objective, including what will be done, and who will do it.**
- **Keep asking and answering the "What's next?" question.**
- **Once you have determined the sequence of events, derive into a time-and-task chart**

Data Analysis

- Describe the strategies used to analyze the data

- Issues of Trustworthiness
  - Credibility
  - Dependability
  - Transferability
  - Confirmability

References

- Up-to-date
- Highly relevant with the problem
- Original source
  - First Order : Journal Publications and Books
  - Second Order : Proceeding Publications
  - Third Order : Technical Report
- Don't include private communications
- Don't cite support for common knowledge

Budget and Resources

- Access to instruments etc
- Itemized Budget
- Budget Narrative

Acknowledgements

- **Anyone who made a contribution such as advice, proofreading, technical support, and funding resources**
- **Don't list your family, unless they really contributed to the scientific contents**

Research Ethics

- **Bioethics is a way of understanding and examining what is "right" and what is "wrong" in biomedical research and practice.**
- **Don't**
  - Present opinions as fact
  - Distort truths
  - Plagiarize
  - Imply that previously published results are original
  - Papers available on the internet – authors put out an informal publication and becomes accepted as a formal. It is expected that the informal version will be removed

Ways of Reaching out to the community

- Seminars in Schools, Local Governments etc
- Newsletters
- Radio and Television programmes etc
- Discussions

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proactivatunja.com

African yam bean *(* ***Sphenostylis stenocarpa****) is found in West* ***Africa***
sites.google.com

raw seeds of ***african yam bean***
scialert.net

Community Responsive Research Efforts (CRRE)

at

Cancer Research and Molecular Biology Laboratories, Biochemistry Department, U.I., NIGERIA.

Garlic (*Allium sativum*),

Garlic

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African locust beans (*Perkia filicoidea)*
Local names:- iru, dawadawa, ogiri
(Locust beans help to decrease arterial blood pressure).

OR

WITH

Pictures courtesy : allnigerianfoods.com; dobbyssignature.com; en.wikipedia.org; littlemissqastronome.blogspot.com; myactivekitchen,com; nairaland.com; nigerianfoodtv.com; sisiyemmie.com; tripstapix.com; wivestownhallconne.com

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Musa is one of two or three *genera* in the family *Musaceae*; it includes **bananas** and **plaintains**. App 70 species of *Musa* are known, with a broad variety of uses.

Fried plantain (Dodo)

Roasted plantain & Groundnut (Boli ati Epa)

Food served on a banana leaf, a traditional way of serving food

Pictures courtesy : groups.yahoo.com; madamsabi.com; wivestownhallconnection.com

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Cassava Manihot esculenta, crantiz.

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*African **Yellow Yam***
(Dioscorea cayenensis)
Yellow Yam

*SUCCESSFUL **YAM** BUSINESS - NIGERIA WORLD'S LARGEST **YAM** PRODUCER*

Yam Porridge
(Asaro)

***cayenensis** – The Common African **Yam**;*
*"White **Yam**"; "**Yellow Yam***

Pictures courtesy : happygamer.ca; udeozochibuzo.wordpress.com; www.ckennethimports.com; www.marksdailyapple.com ; www.rtb.cgiar.org

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***Hibiscus sabdariffa;* Zobo**

unitedimportexport.over-blog.com

www.photos-gratuites.org

Green Amaranth

Amaranthus sp.

Amaranth grain (left) and wheat (right)

Grain amaranth (*Amaranthus* spp. L.)

e-Resources available for access

- www.aginternetwork.org
- www.oaresciences.org
- www.who.int/hinari
- http://www.research4life.org

Other References

- Schippers, R.R. **(2000)** *African Indigenous vegetables. An overview of the cultivated species.* Chatham, U.K., NRI, CTA, DFID. 214 pp.
- Montagnac J. A., C. R. Davis, and S. A. Tanumihardjo. 2009. "Nutritional Value of Cassava for Use as a Staple Food and Recent Advances for Improvement." Comprehensive Reviews in Food Science and Food Safety 8:181–194. http://dx.doi.org/10.1111/j.1541-4337.2009.00077.x


THANK YOU