IFPRI
Tool Pool Seminar
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Net-Map toolbox

Influence Mapping of Social Networks©

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CGIAR Challenge Program on WATER & FOOD

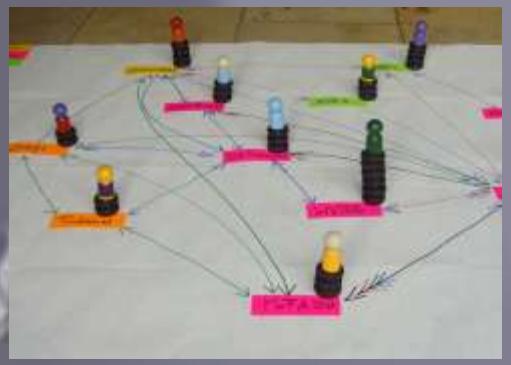
INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE
sustainable solutions for ending hunger and poverty
IFPRI
Supported by the CGIAR

Structure Part 1: 12:30 – 2:00

- Introduction: The Basin Board's Dilemma
- What is Net-Map?
- How to do Net-Map step-by-step
- Basic network parameters
- Case-study examples

Structure Part 2: 2:30 – 4:30

- Draw your own map
- Develop a square matrix for data entry
- Import data from Excel to Visualyzer
- Introduction to qualitative, visual and quantitative analysis



	A	B	C	D	E	
1		WoGroup	NGO	MarketWo	IrrFarmers	Fula
2	WoGroups					
3	NGO					
4	MarketWo					
5	IrrFarmers					
6	Fulani					
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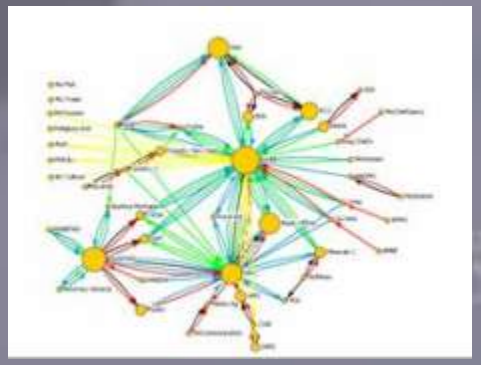
8	MoAg				1	
9	DA					
10	Fisherm					



Introduction:
The Basin Board's Dilemma

- New multi-stakeholder water governance body (Ghana)
- Members: government, civil society, traditional authorities
- Formal and informal links
- Conflicting development and environmental goals
- High expectations but low direct enforcement capacity

"Will this be just another talk show?"




Basin Board needed to know

- Who can influence our success?
- What formal and informal canals can we use?
- Who is how influential? Who are the core actors?
- What are their roles? What are their goals?
- What are the networks of other board members?
- Have my colleagues collaborated with these organizations in the past?
- What are potential coalitions, cut-points, bottle-necks?

Strategic Influence Network Planning

Research Interest
We wanted to know:

- What is the water-governance landscape?
- How does multi-stakeholder governance work?
- Do people see influence connected to position in the network?
- Which kind of link is crucial for determining influence?
- Can improved network understanding improve collaboration?
- What are clusters, cut-points, brokers etc.
- How does network develop over time?

We needed tool that:

- Satisfies both, research interest and immediate stakeholder needs
- Is low-tech, low-cost, intuitive, inter-culturally applicable
- Connects to existing research tools and methods
- Makes implicit knowledge explicit
- Structures complex governance reality
- Is flexible for use in different contexts

Net-Map

Visualize, discuss, analyze and improve influence networks:

- Actors
- Links (formal and informal)
- goals and
- influence

Based on:

- Social Network Analysis (e.g. Hanneman 2001)
- Power Mapping (e.g. Schiffer 2007)
- Participatory and Action Research (e.g. Chambers 1983; Freire 1990)
- Stakeholder Analysis (e.g. DFID and World Bank 2005)

Equipment needed

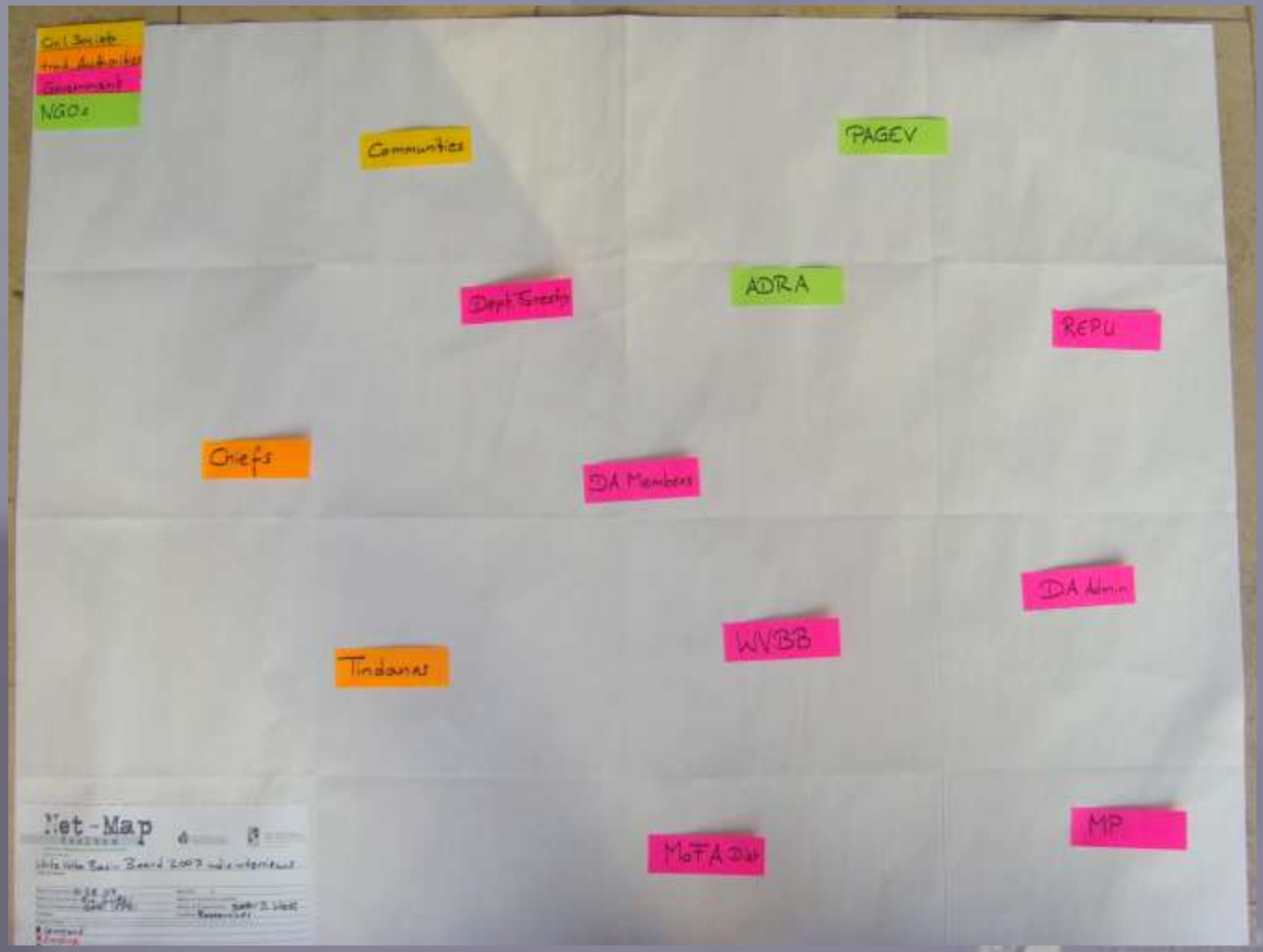
- Large sheets of paper (e.g. flip charts)
- Pens of different color (4-5)
- Actor cards (e.g. “post-it”) of different color
- Influence pieces (e.g. checkers pieces, bicycle spare parts, bottle caps) that can be stacked into towers
- Actor figurines (optional)
- Recording device / note book



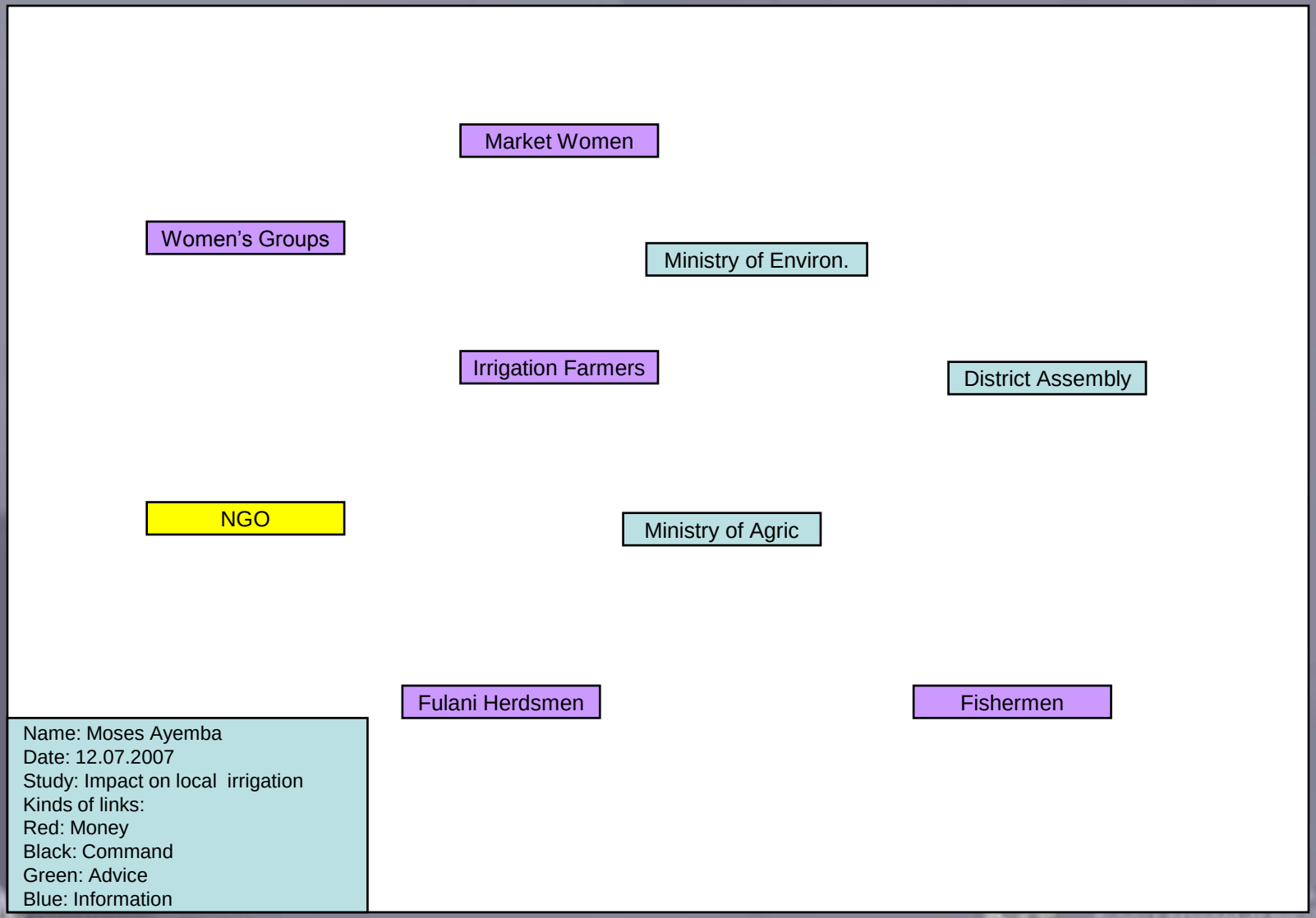

Before going to the field:

- Define research question
- Define links
- Define goals of actors (if needed)
- Define kinds of actors (if needed)
- Draw a map of your own understanding of the influence network as first pre-test

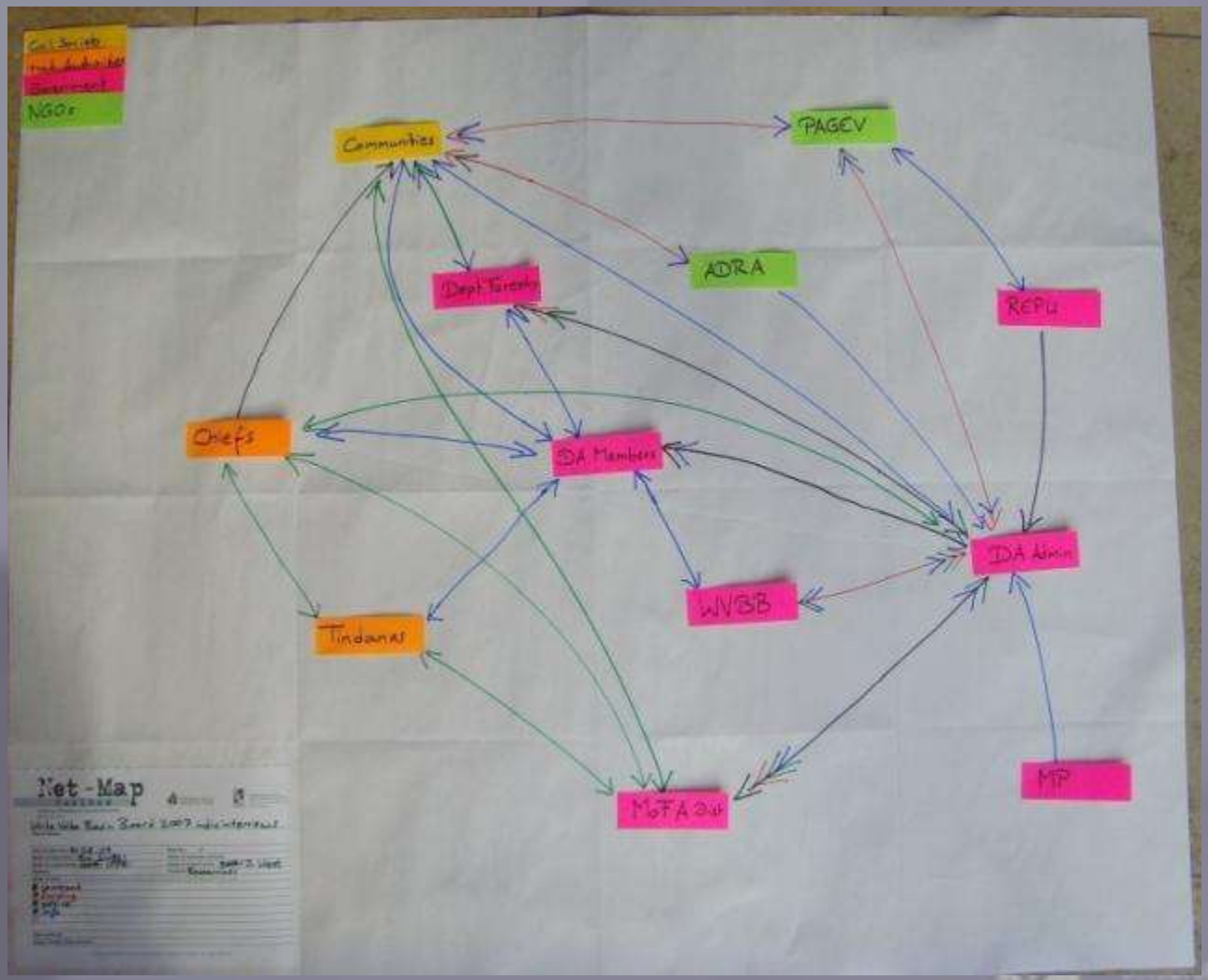
Step 1. Who is involved (photo)? Add actor cards, color according to kind of actor.



Step 1: Who is involved (sketch)? Add actor cards, color according to kind of actor.



Step 2. How are they linked (photo)? Add links: color = kind of link, arrow heads = direction of flow.



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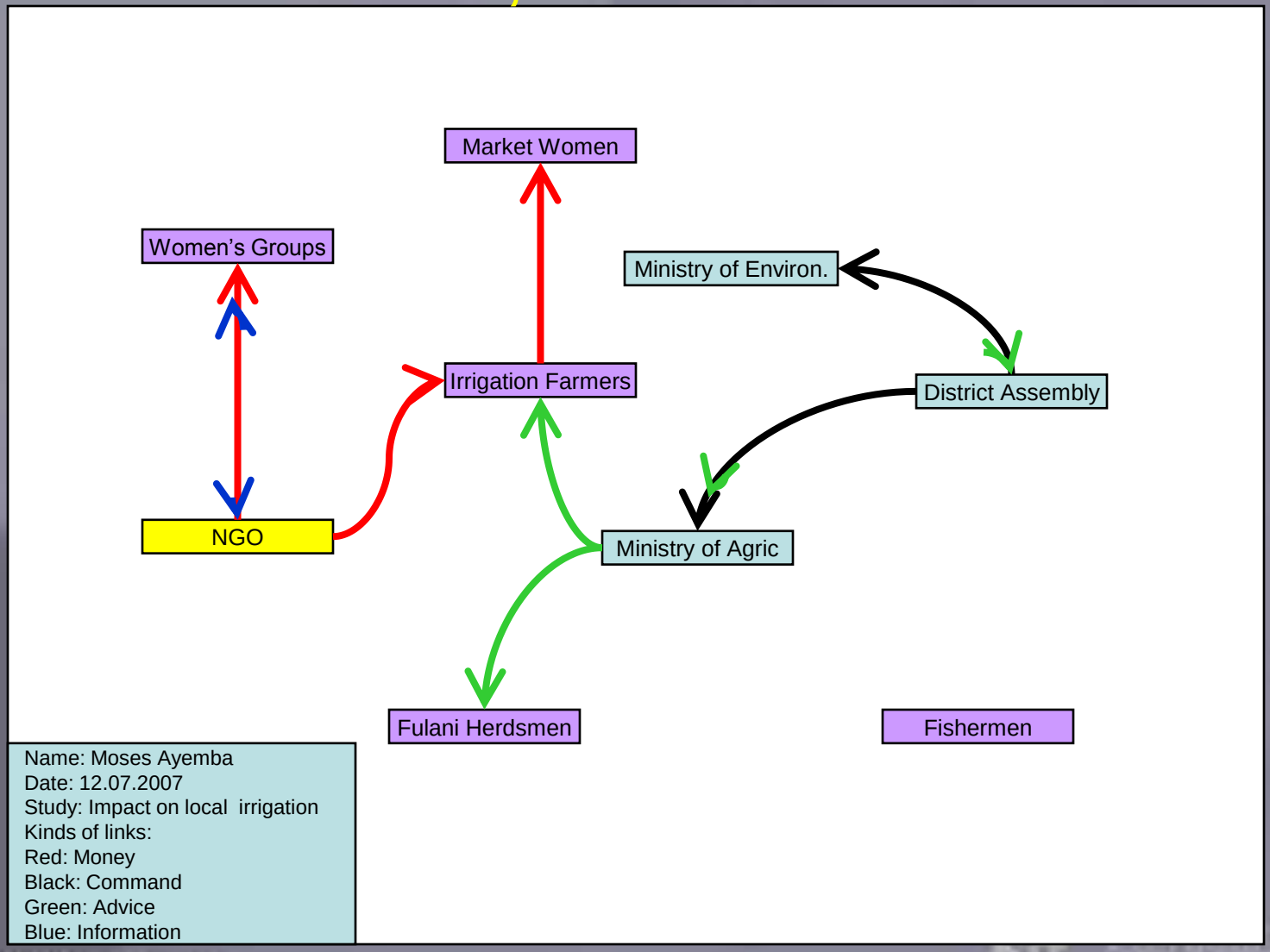
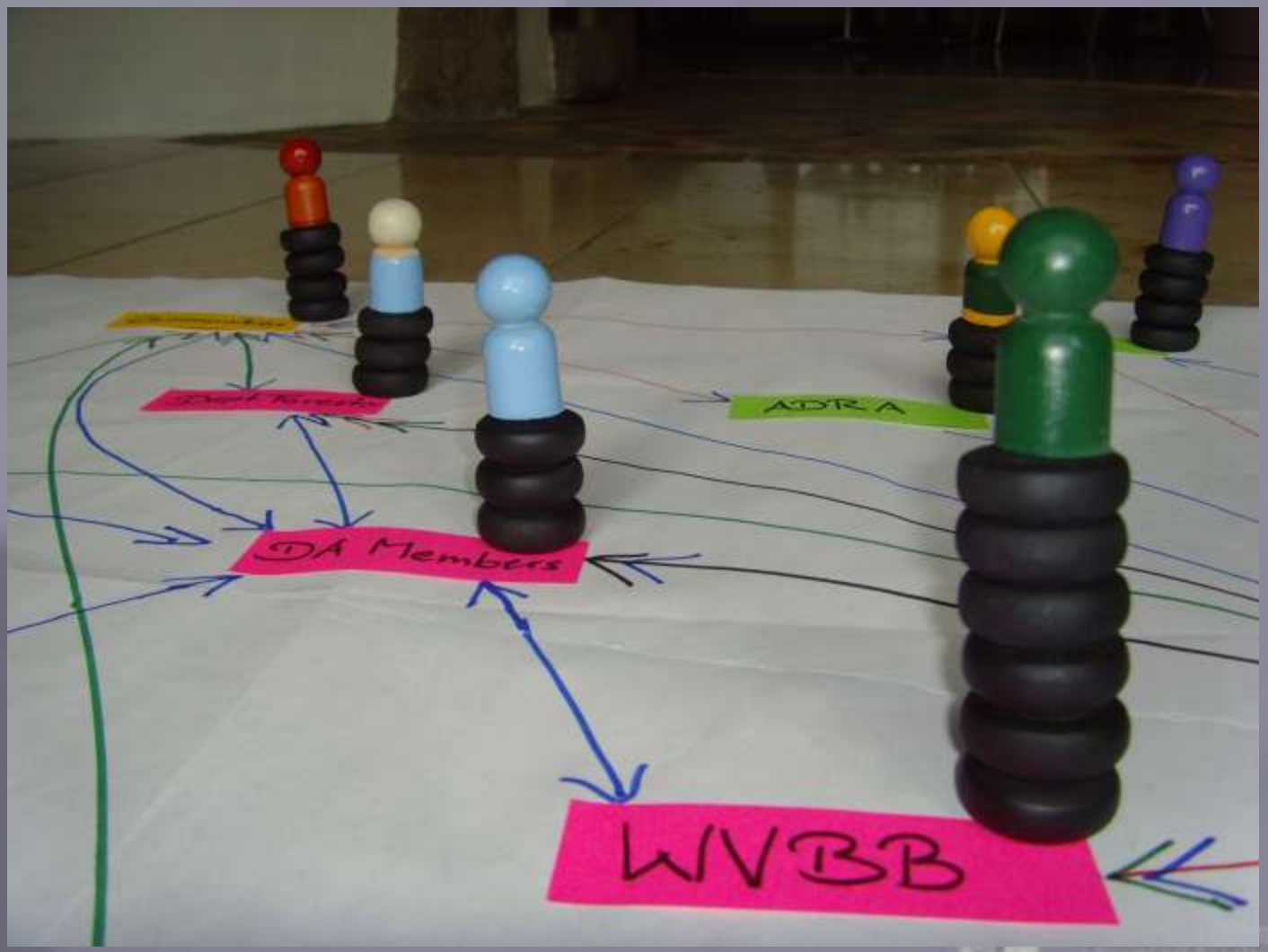


Step 3. How strongly can they influence (photo)? Add influence towers: Higher influence = higher tower



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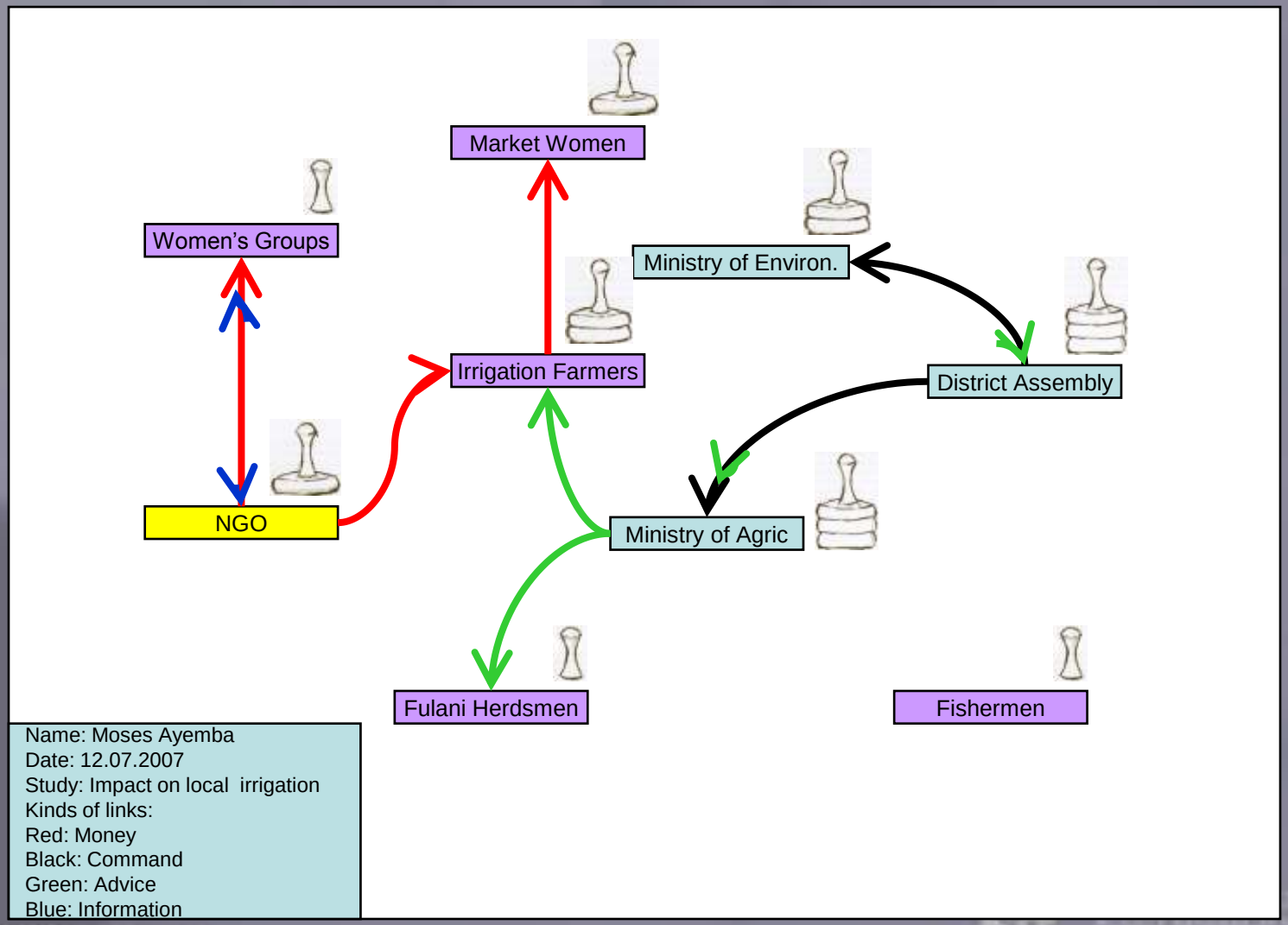
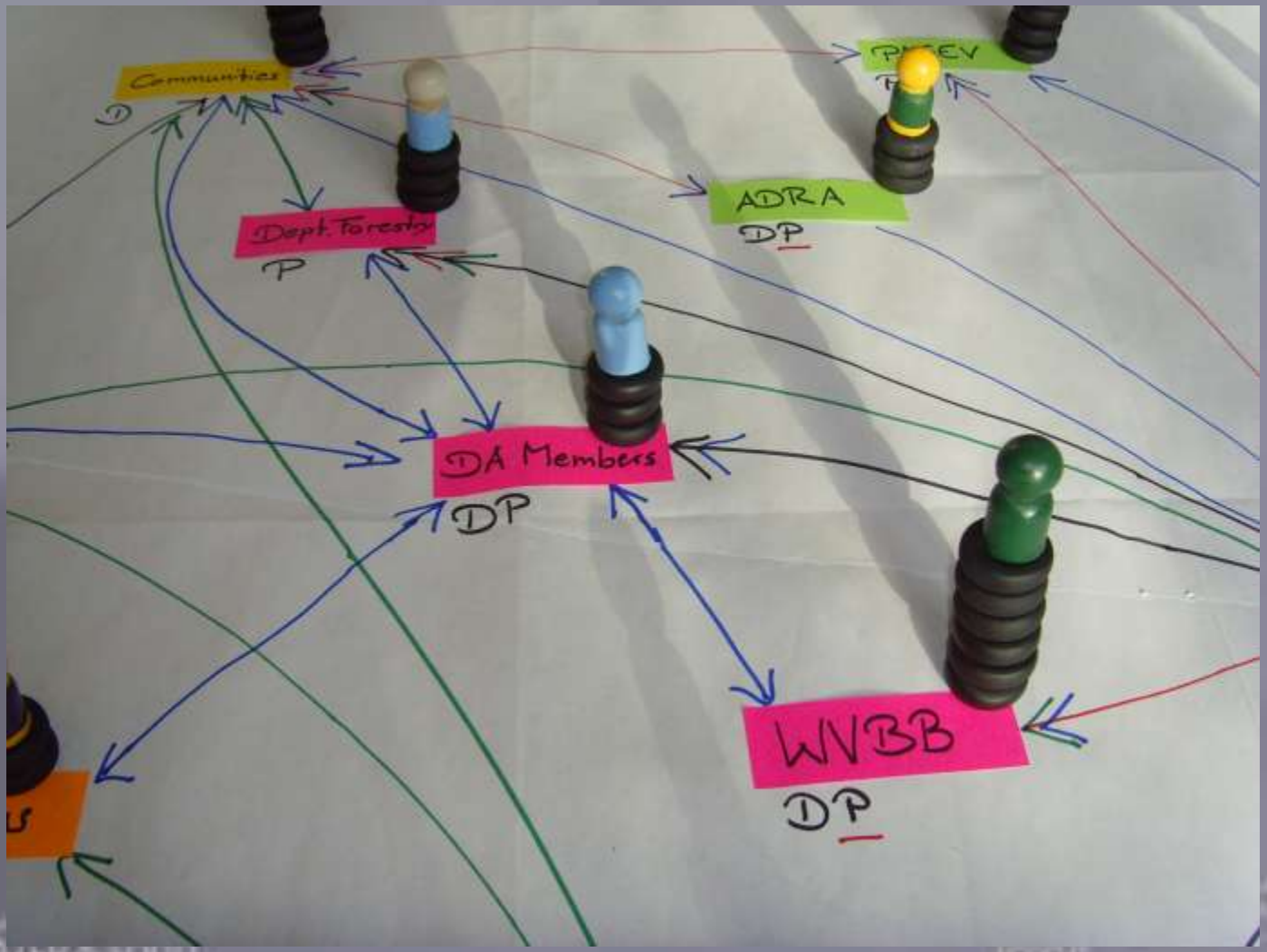


Step 4. What are their goals (photo)?
Add abbreviations / symbols for goals.
Here: D = Development ; P = Protection of Environment



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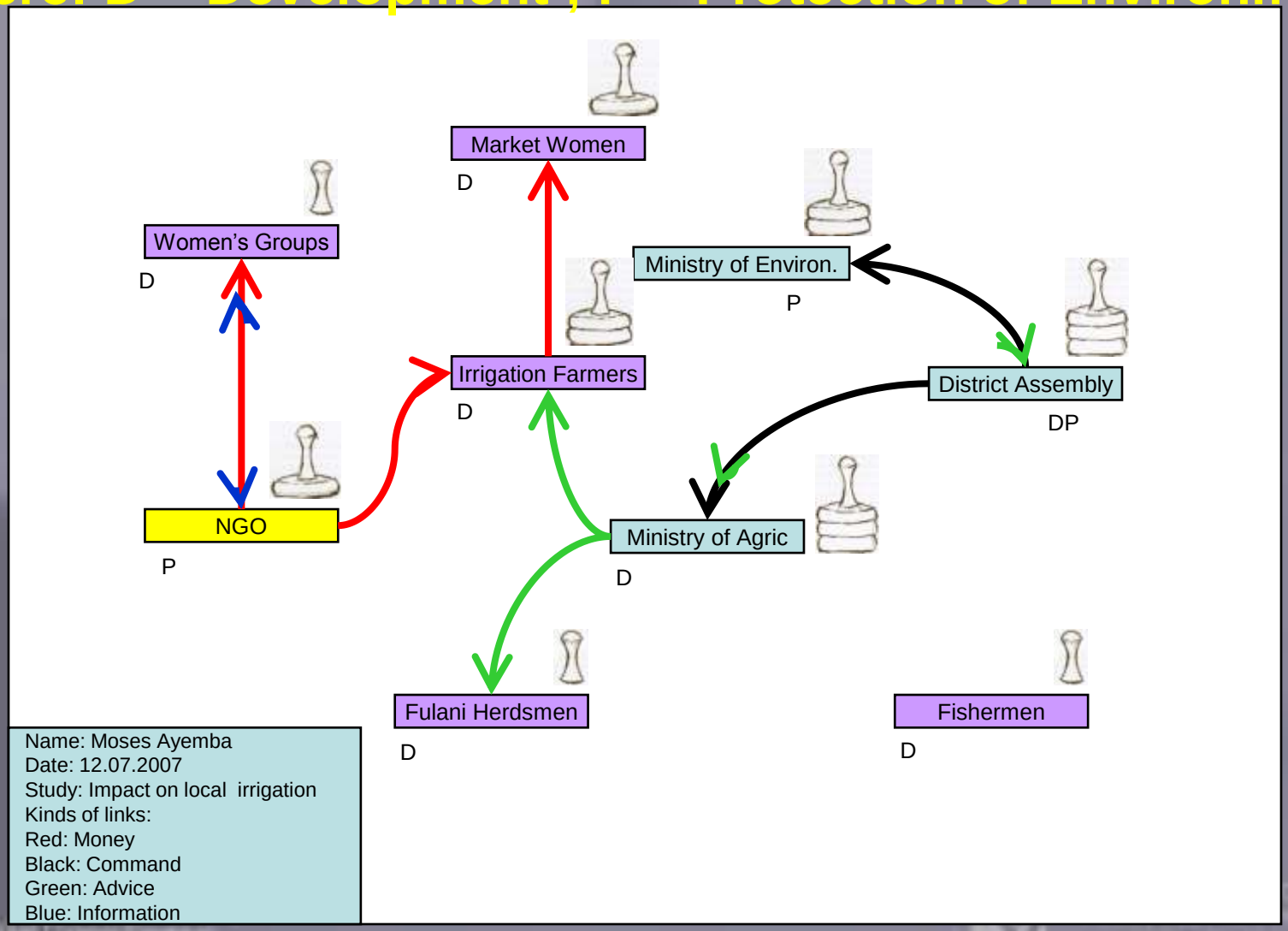


Some basic Social Network Concepts:

- Node Properties:
  - Degree Centrality: How many links does one actor have?
  - Closeness Centrality: How many steps from one actor to every other actor in the network?
  - Betweenness Centrality: How often does on actor link others who are not directly linked?
  - Eigenvector Centrality: Is an actor linked to others that are well connected?

Some basic Social Network Concepts:

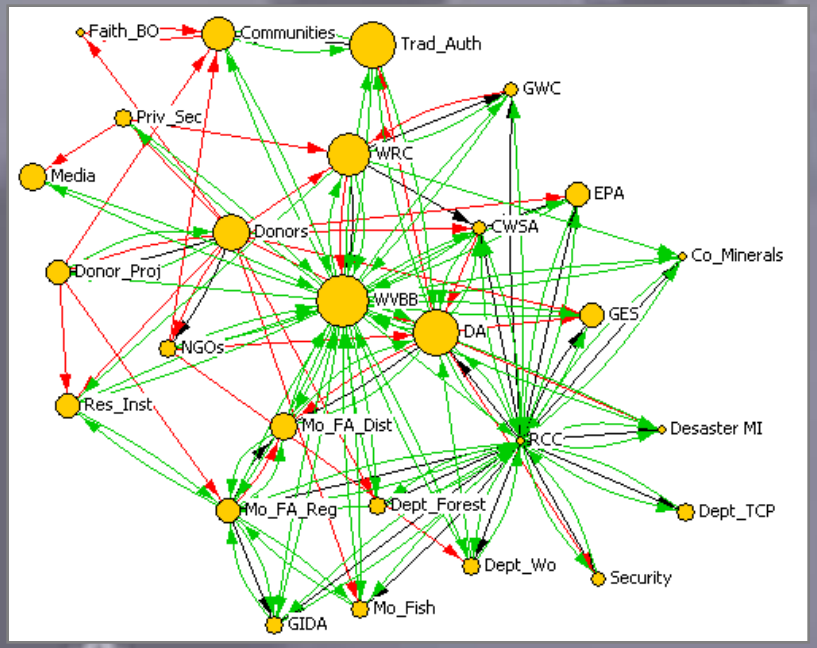
- Network Properties / Network Roles:
  - Clusters: Groups of actors where everyone is linked to everyone
  - Centralization: Degree to which a network is organized around one central node
  - Cut-Point / Broker: If you remove this actor, the network will be disconnected
  - Heterogeneity/Homogeneity: Important for innovation and stability

Case Study Examples:

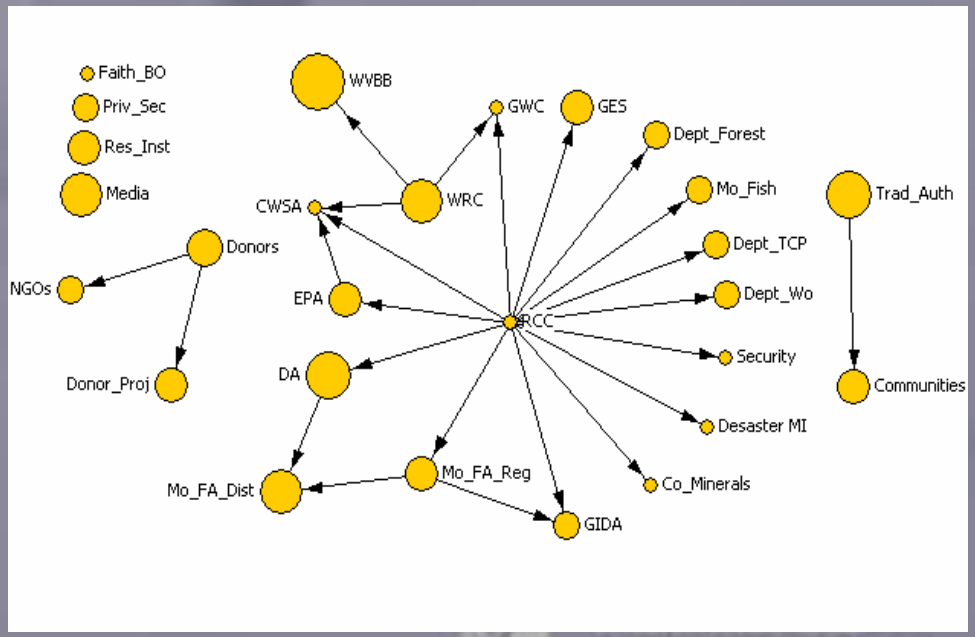
- Multi-stakeholder water governance
- African Peer Review Mechanism Process
- Fisheries governance in small community based reservoirs
- Indicators for Benchmarking Agricultural Innovation Systems

Multi-stakeholder water governance: The Basin Board

Common network map:
Formal lines of command (black)
Flow of funds (red)
Giving advice (green)

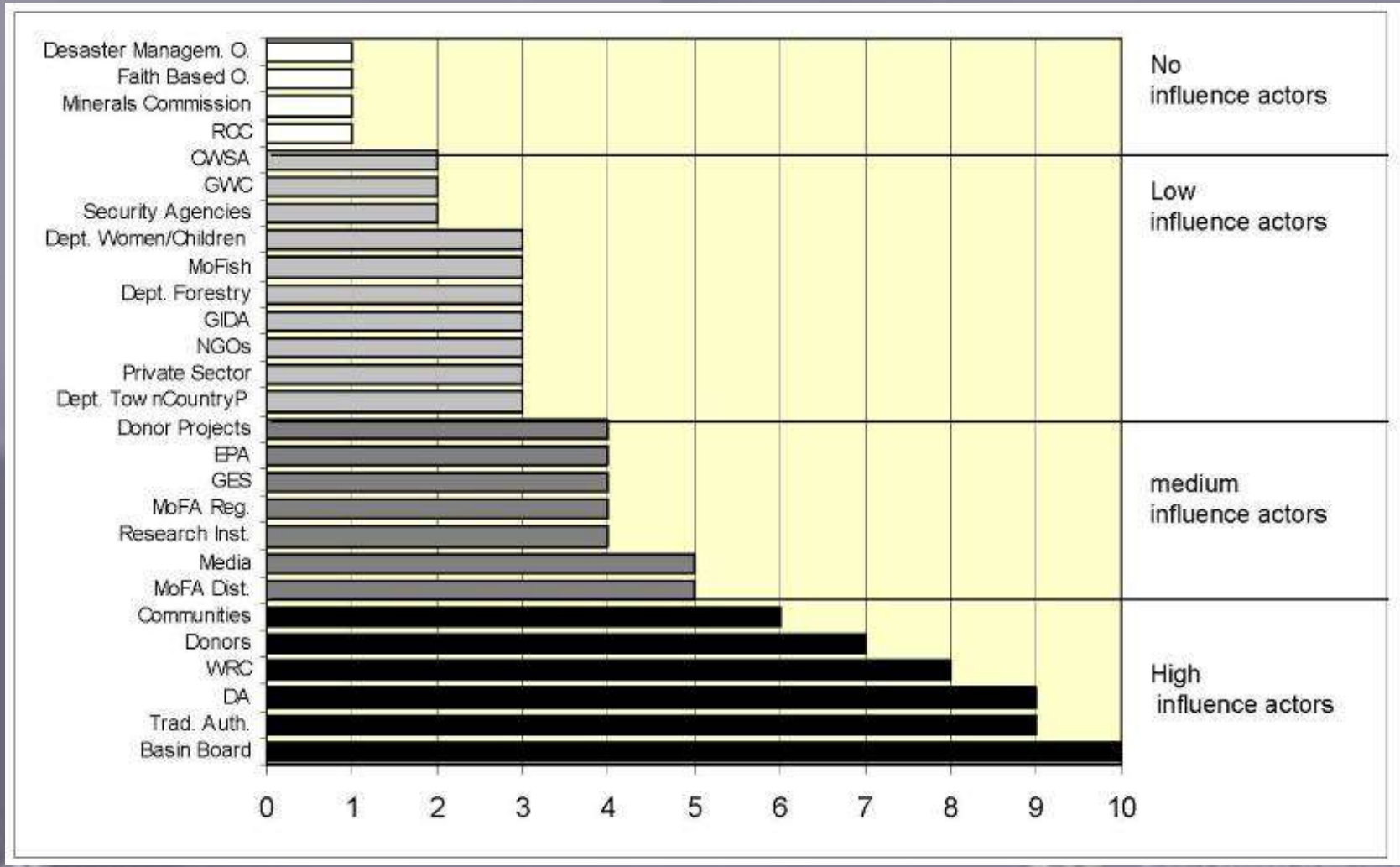


Common network map:
Formal lines of command



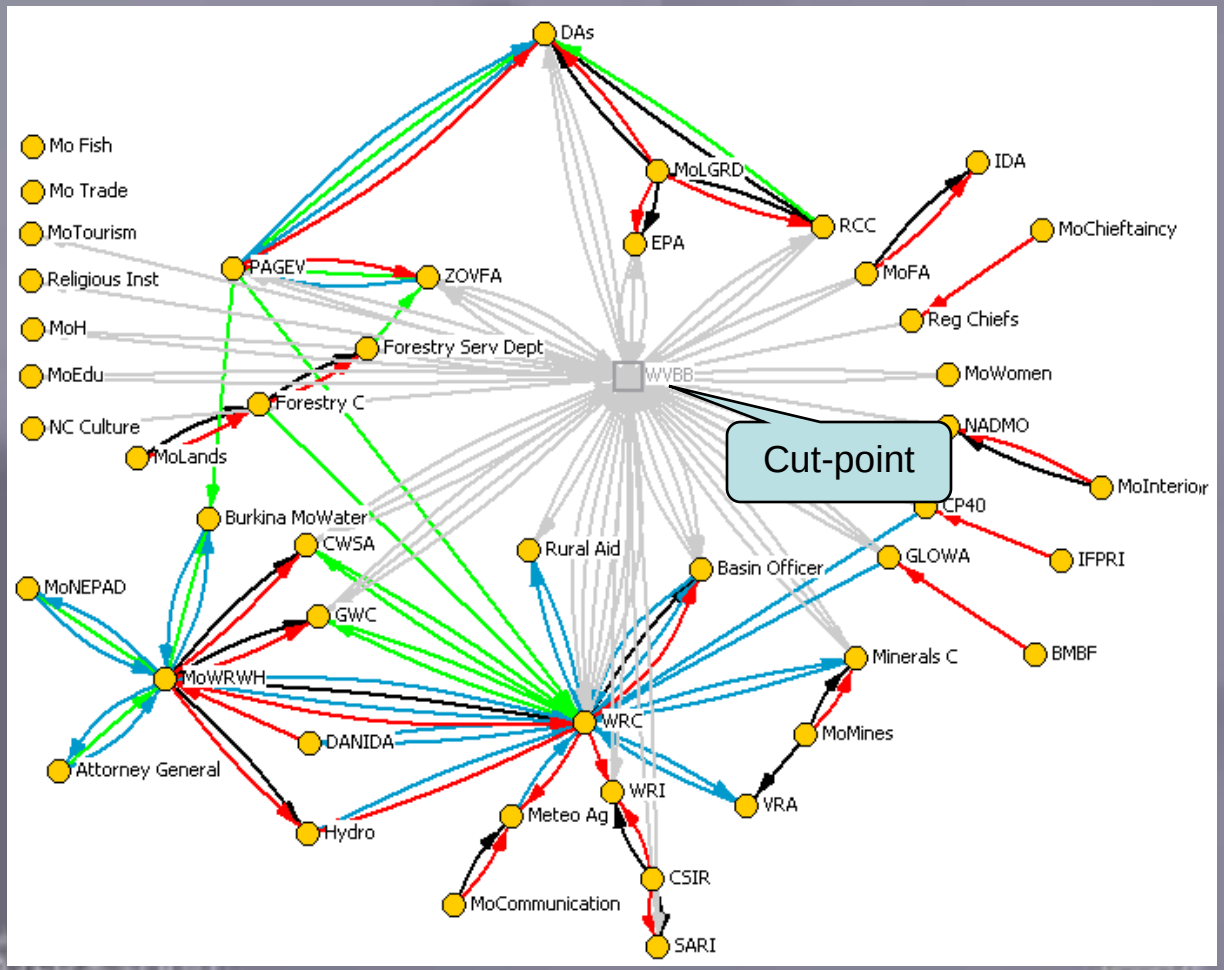
http://netmap.files.wordpress.com/2007/11/schiffer07_net_map_water_governance_ghana.pdf

Multi-stakeholder water governance: The Basin Board



Common network: height of influence tower

Multi-stakeholder water governance: The Basin Board Learning network concepts



Black = command
Red = money
Green = support / advice
Blue = info
Yellow = future links

Example: Cut-point in Net-Map of individual board member

African Peer Review Mechanism Process

- "Who is *the* civil society?"
- Determine membership for civil society District Oversight Committees in Ghana
- Info flows concerning:
  - Physical infrastructure
  - Governance perception
  - Whistle blowing
- Part of project planning and implementation

(see http://netmap.files.wordpress.com/2008/03/waale_07_netmap_aprm_ghana.pdf)

Fisheries governance in small community based reservoirs

- “How do local communities organize the multiple use of small reservoirs?”
- Use Net-Map in rural African communities
- Determine actors impacting on fisheries activities in Multiple Use Systems

- Understand linkages of support and disturbance
- Use Net-Map to support group formation

http://netmap.files.wordpress.com/2007/11/hauck07_net_map_fisheries_ghana.pdf

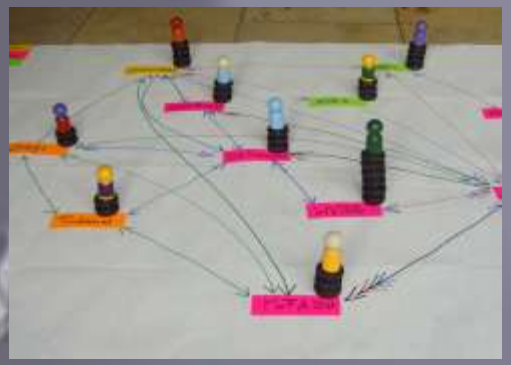
Indicators for benchmarking Agricultural Innovation Systems in various countries

- “How can you compare innovativeness of agricultural systems between sectors and countries?”
- Use Net-Map in a combination of methods
- Explore systemic nature of innovation system
- Develop standardized approach to allow cross sector and cross country comparison

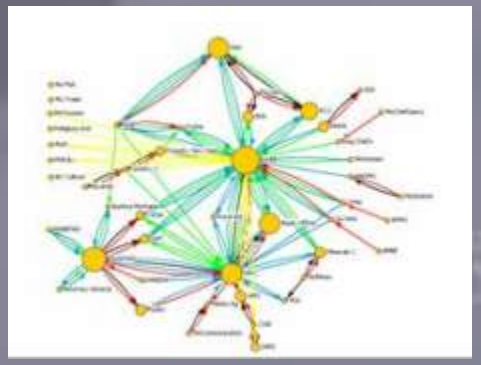
http://netmap.wordpress.com/2008/05/08/podcast-on-maize-and-chicken-in-ethiopia/

Part 2: 2:30 – 4:30

- Draw your own map
- Develop a square matrix for data entry
- Import data from Excel to Visualyzer
- Visual analysis
- Quantitative network and actor characteristics



	A	B	C	D	E	
1		WoGroup	NGO	MarketWo	IrrFarmers	Fula
2	WoGroups					
3	NGO					
4	MarketWo					
5	IrrFarmers					
6	Fulani					
7	MoE					
8	MoAg				1	
9	DA					
10	Fisherm					



Draw your own map:

How to define your question:

- "Who influences XY in what way?"
- XY is a complex issue influenced by different actors with various goals, who are linked by formal and informal links
- XY could be e.g. your project success, the change of a legislation, the adoption of an innovation, the solution of a conflict, your personal career etc.
- Formulate XY concretely (but not too narrow)

Draw your own map

How to define links:

- “How do actors interact to influence XY?”
- Select not more than 4-5 links
- Formal and informal links
- Links that are different from each other
- No links that everybody or nearly nobody shares
- Pre-test links and wording!
- Define links before or in the interview
- Links could be i.e. giving info, advice, funding, command, conflict, family ties, political pressure etc.

Draw your own map

Define goals:

- “Do actors follow different goals concerning xy?”
- Develop abbreviations or symbols

Define actor groups:

- Do actors belong to distinct groups e.g.
  - Government, NGO, private sector or
  - Local, regional, national level
- Assign card colors to groups

Draw your own map:

Group exercise: Follow step 1-4 (above):

1. Who is involved: Write actors on card and distribute on map
2. How are they linked: Draw arrows of different color
3. How influential are they: Build influence towers
4. What are their goals: Assigns goals to actors
5. What does this mean: Discuss Net-Map

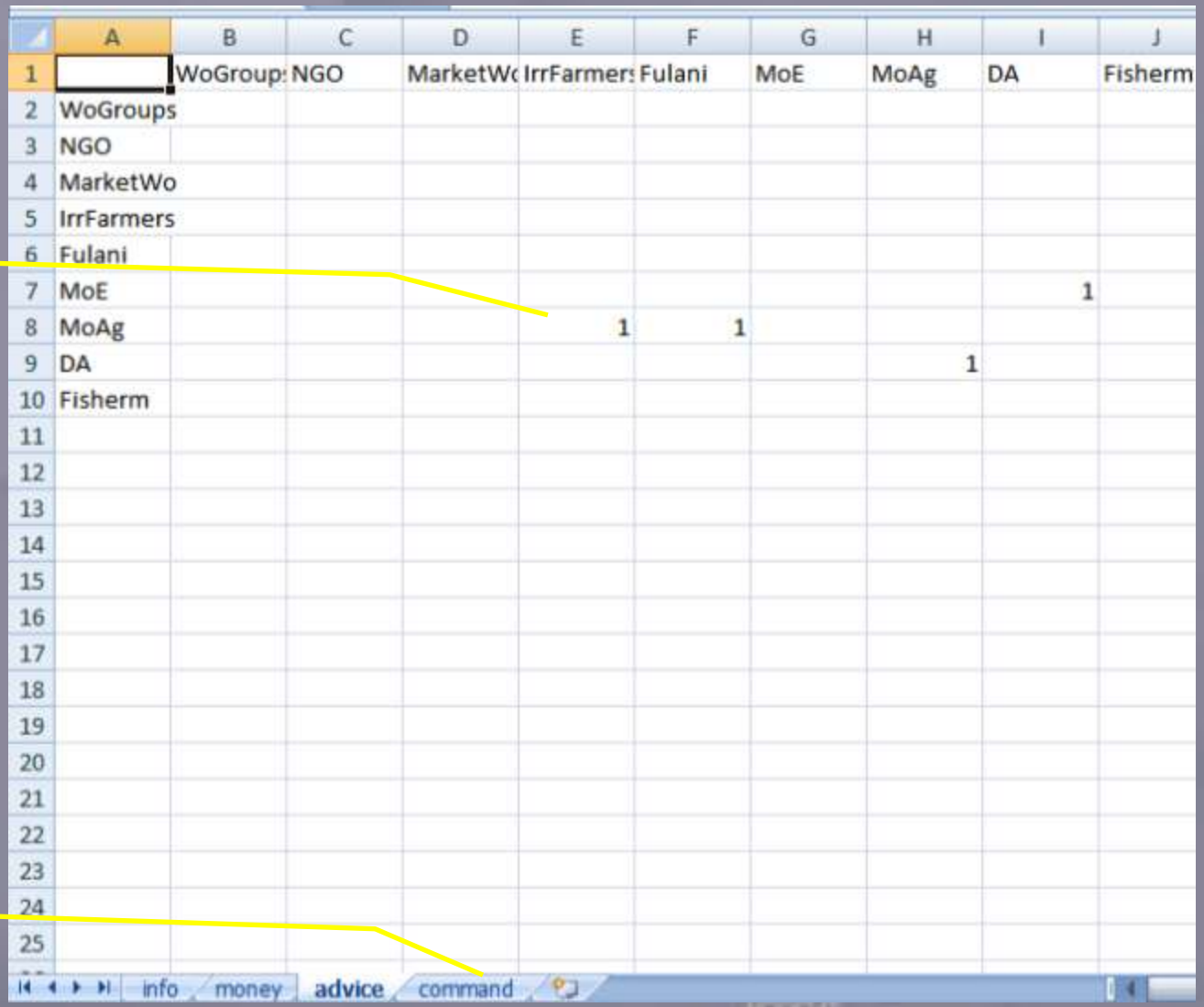
How to enter paper maps into matrix

- Primary data entry in Excel
- Symmetric square matrix: All actors (in same order) as labels for columns and rows
- Actor A *gives* something to Actor B: Put “1” in row A, column B
- If no interaction, leave blank

Example: Square Matrix sheet “advice”

MoAG gives advice to IrrFarmers

One file per interview, one sheet per kind of link



	A	B	C	D	E	F	G	H	I	J
1		WoGroup:	NGO	MarketWo	IrrFarmers	Fulani	MoE	MoAg	DA	Fisherm
2	WoGroups									
3	NGO									
4	MarketWo									
5	IrrFarmers									
6	Fulani									
7	MoE								1	
8	MoAg				1	1				
9	DA							1		
10	Fisherm									
11										
12										
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19										
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22										
23										
24										
25										

info | money | advice | command

Example: Attribute Sheet

Actual height of tower (number of pieces)

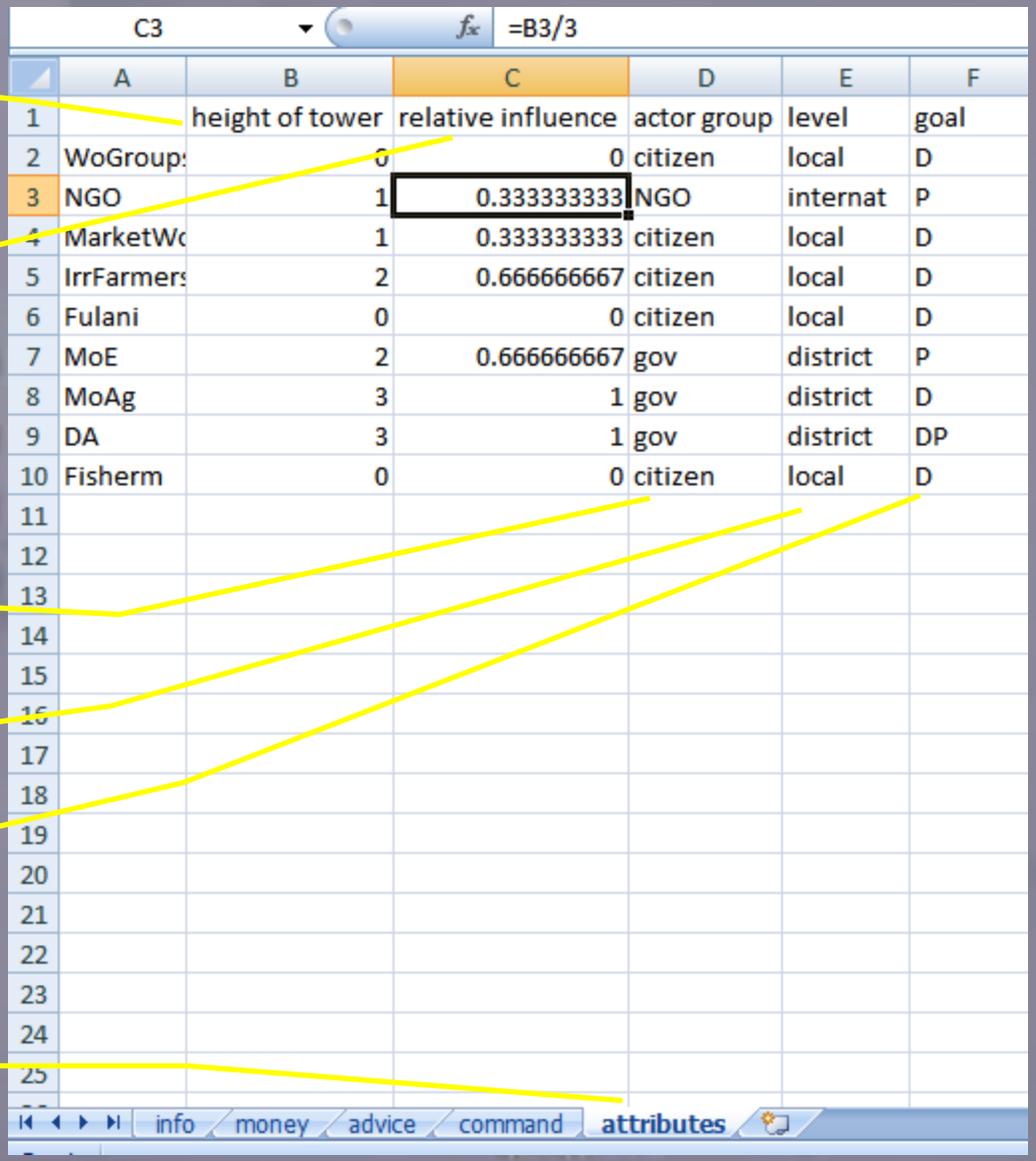
Normalized influence value: Divide height of tower by height of highest tower in this map

Actor groups according to color of actor card (pre-defined categories)

Other actor characteristics of interest

Goals of actors

1 attribute sheet per interview



C3 | =B3/3

	A	B	C	D	E	F
1		height of tower	relative influence	actor group	level	goal
2	WoGroups	0	0	citizen	local	D
3	NGO	1	0.333333333	NGO	internat	P
4	MarketWo	1	0.333333333	citizen	local	D
5	IrrFarmers	2	0.666666667	citizen	local	D
6	Fulani	0	0	citizen	local	D
7	MoE	2	0.666666667	gov	district	P
8	MoAg	3	1	gov	district	D
9	DA	3	1	gov	district	DP
10	Fisherm	0	0	citizen	local	D
11						
12						
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14						
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17						
18						
19						
20						
21						
22						
23						
24						
25						

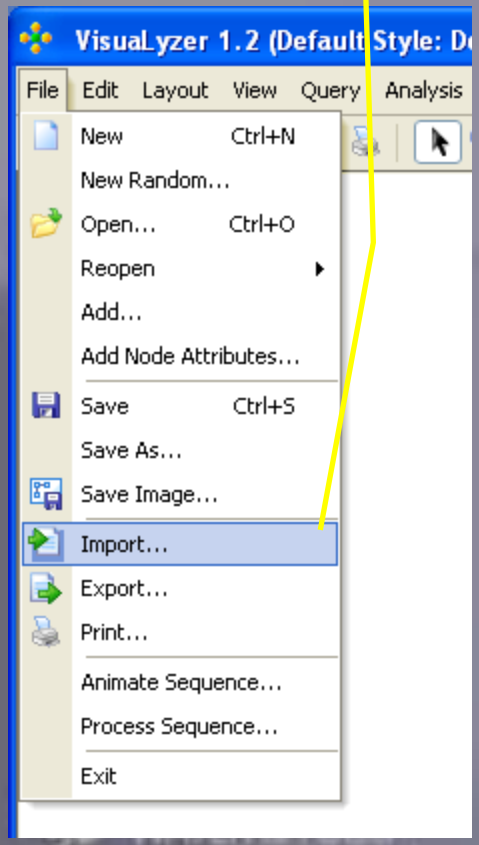
info | money | advice | command | attributes

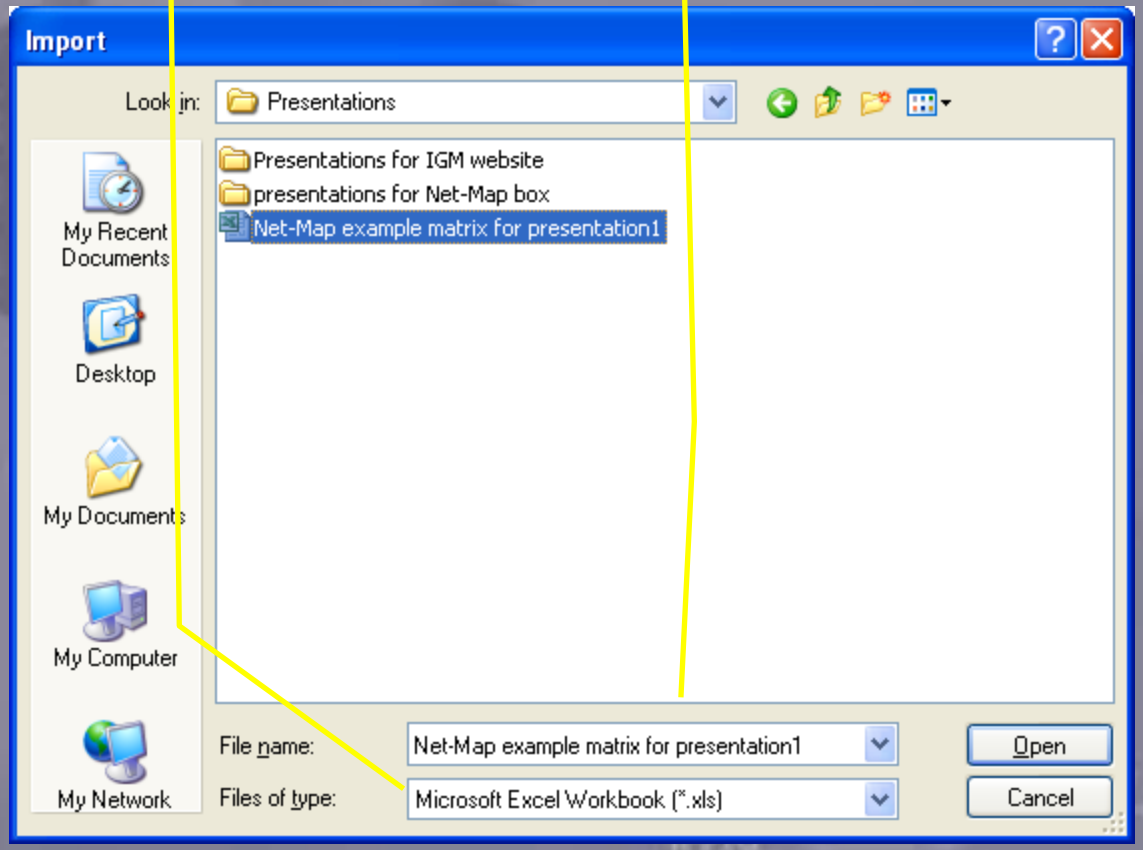
Import Square Matrix in Social Network Analysis Program – Example: VisuaLyzer

1. File - Import

2. Indicate Format: Excel

3. Select and open document

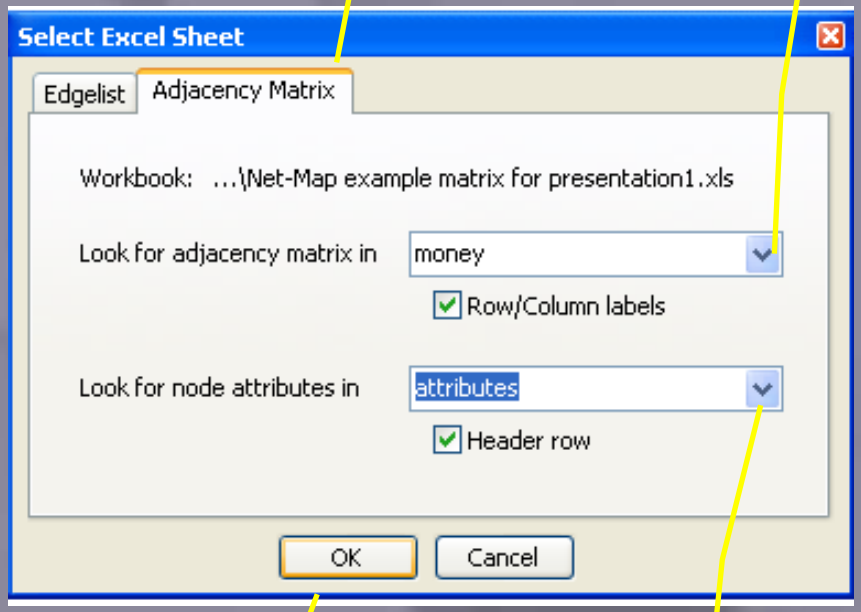




Import Square Matrix in Social Network Analysis Program – Example: VisuaLyzer

4. Select Matrix Format: Adjacency

5. Select first link



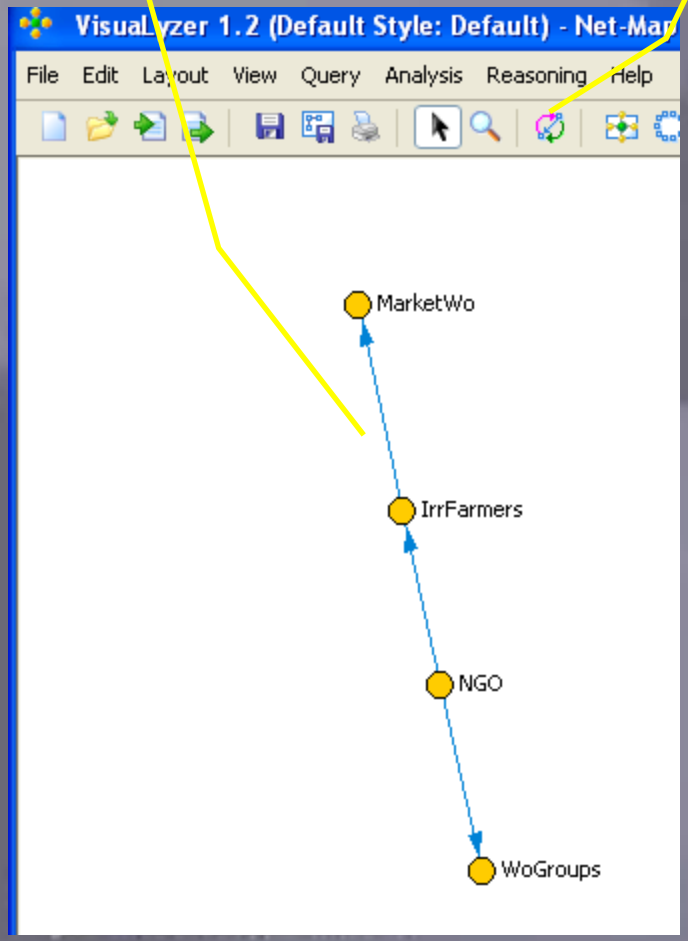
6. Select attribute sheet

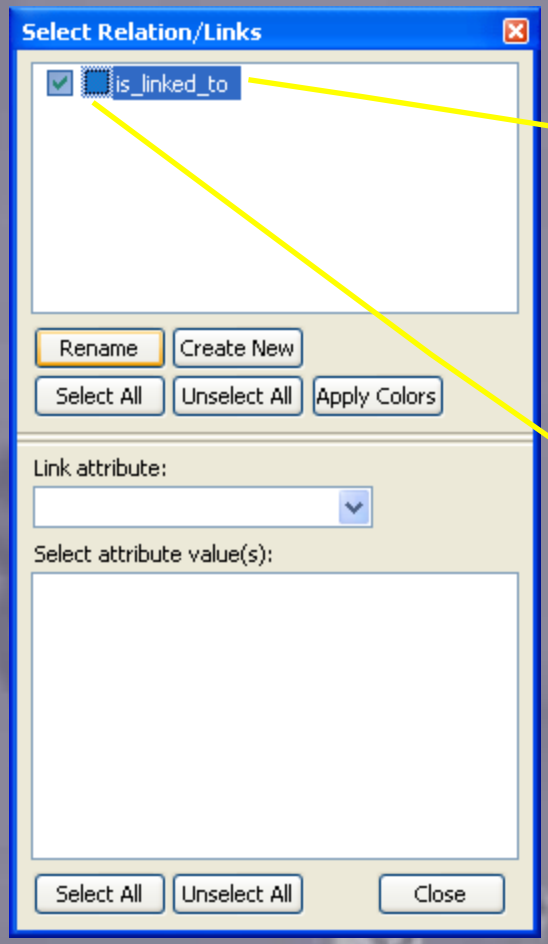
7. OK!

Rename relation

8. First link imported

9. Click: Select Relation Icon

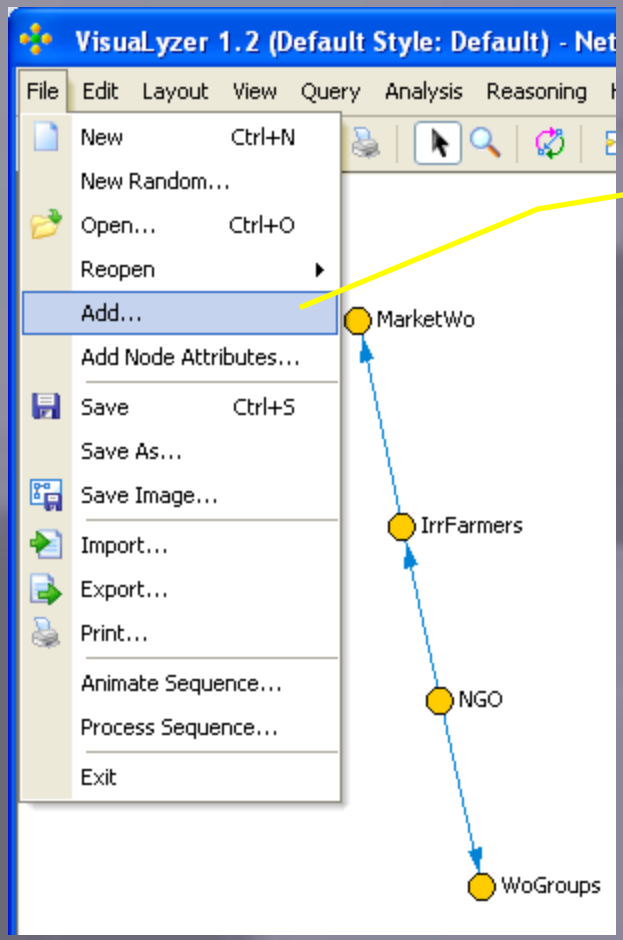




10. Change "is_linked_to" into name of link e.g. "money"

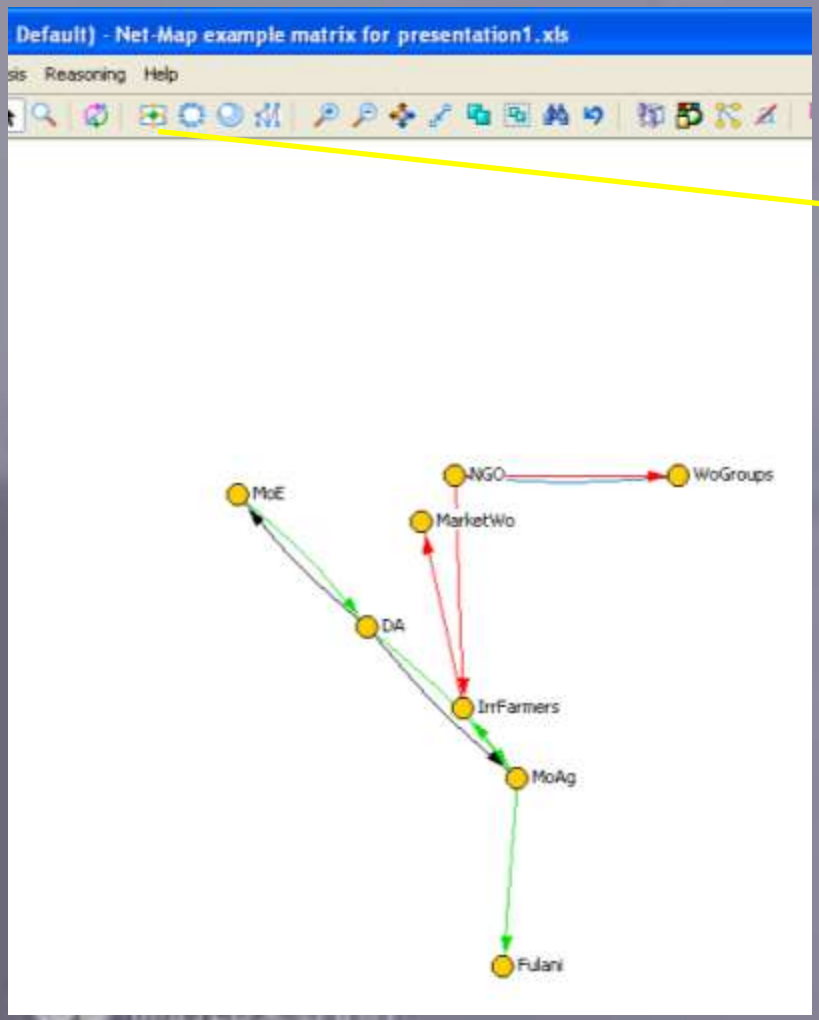
11. Change color of link if desired

Add next link

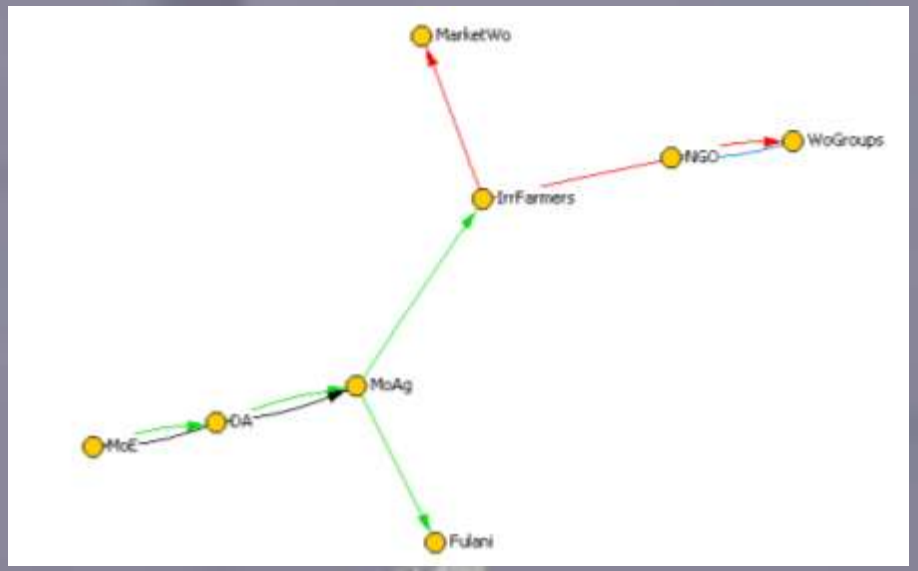


12. Add next link by clicking “add” and following step 2-11

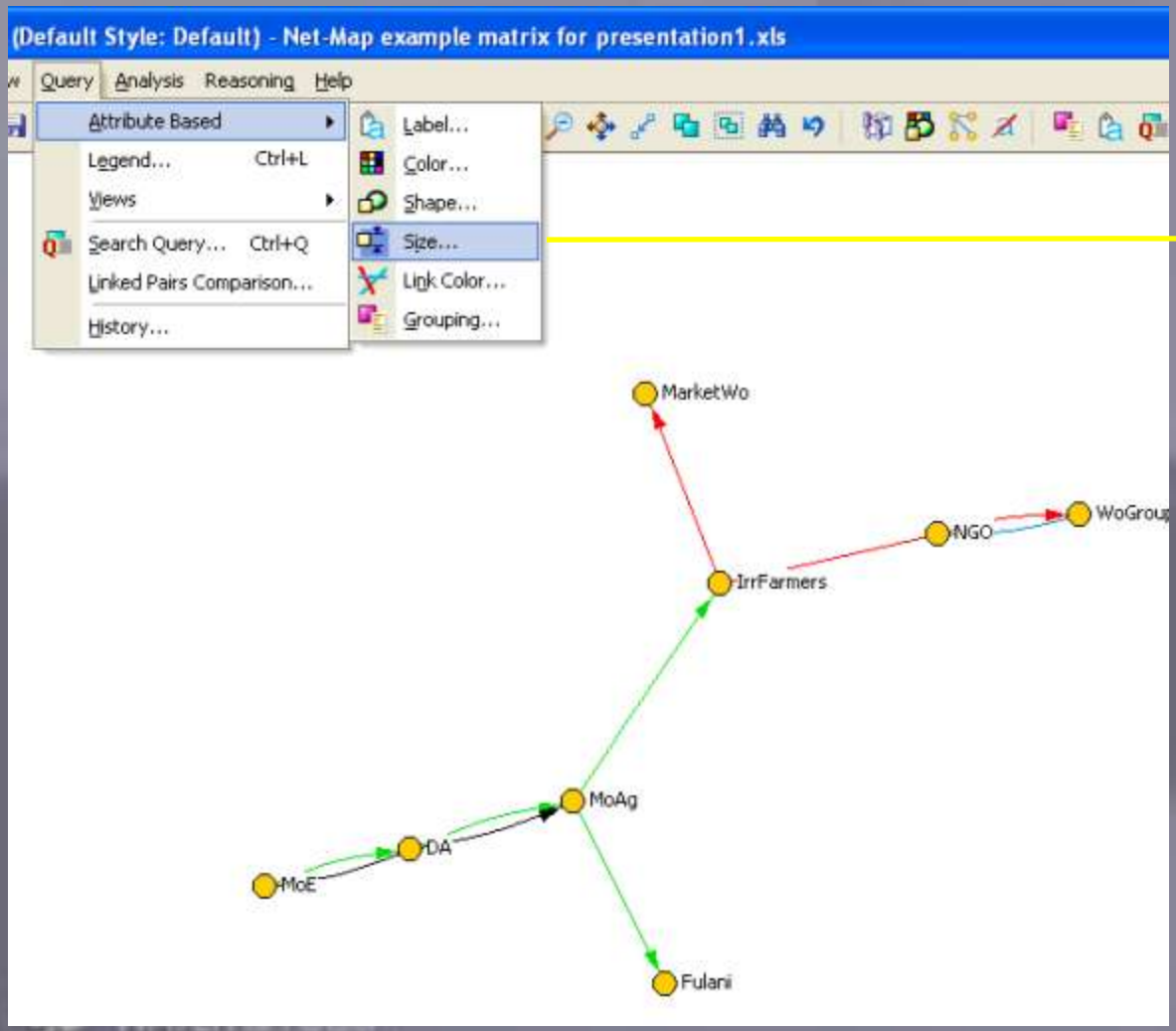
Straighten Layout: Spring embedding



12. Click “spring embedding for layout according to network structure

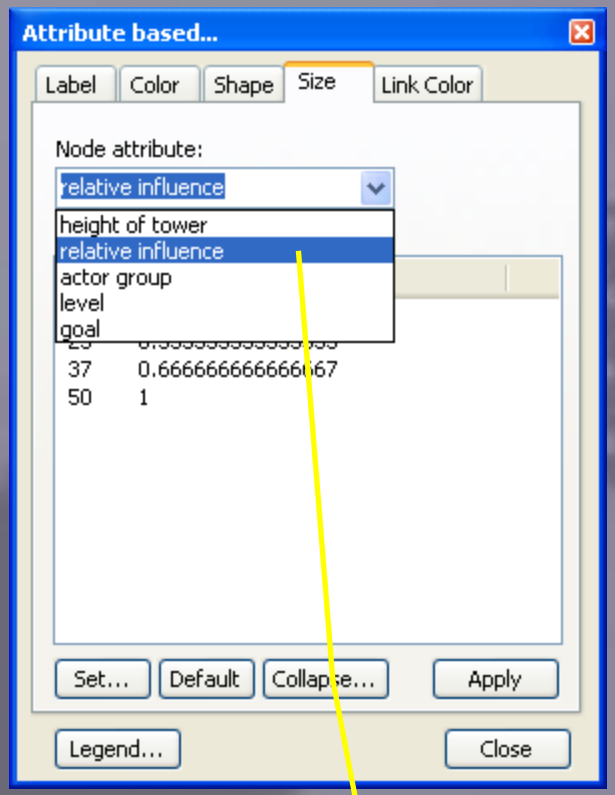


Node size according to influence tower

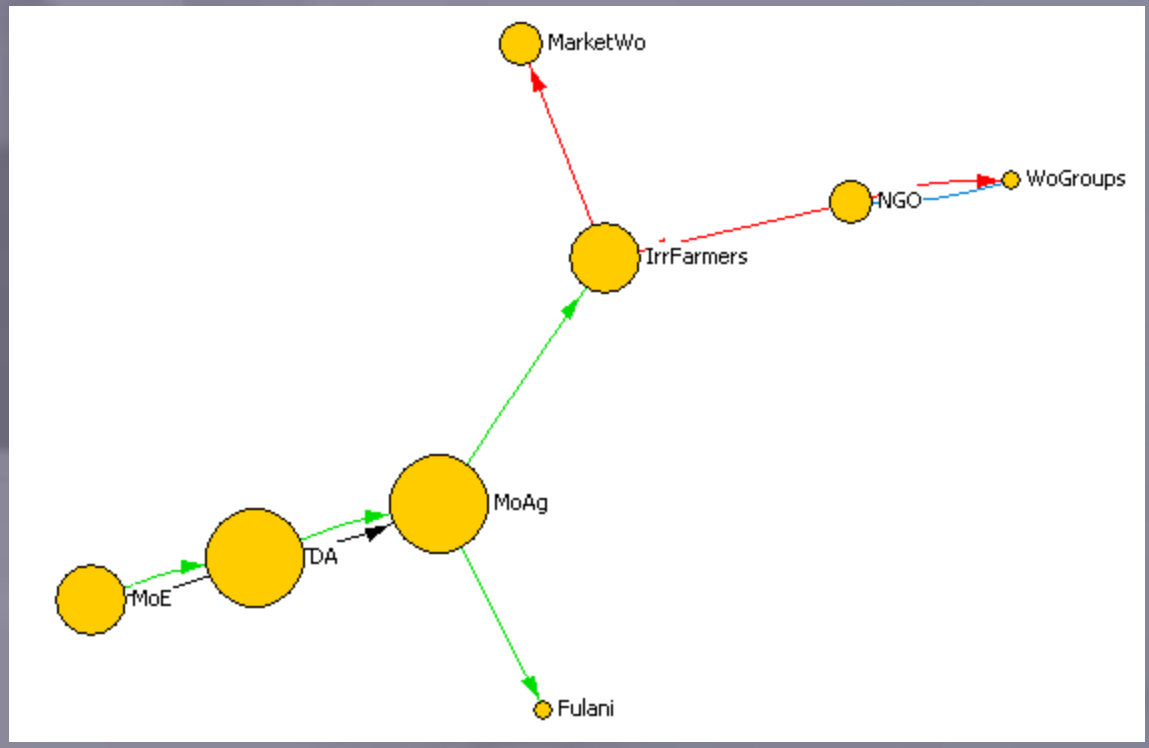


13. Click “Attribute based size” to reflect the height of influence tower by size of dot

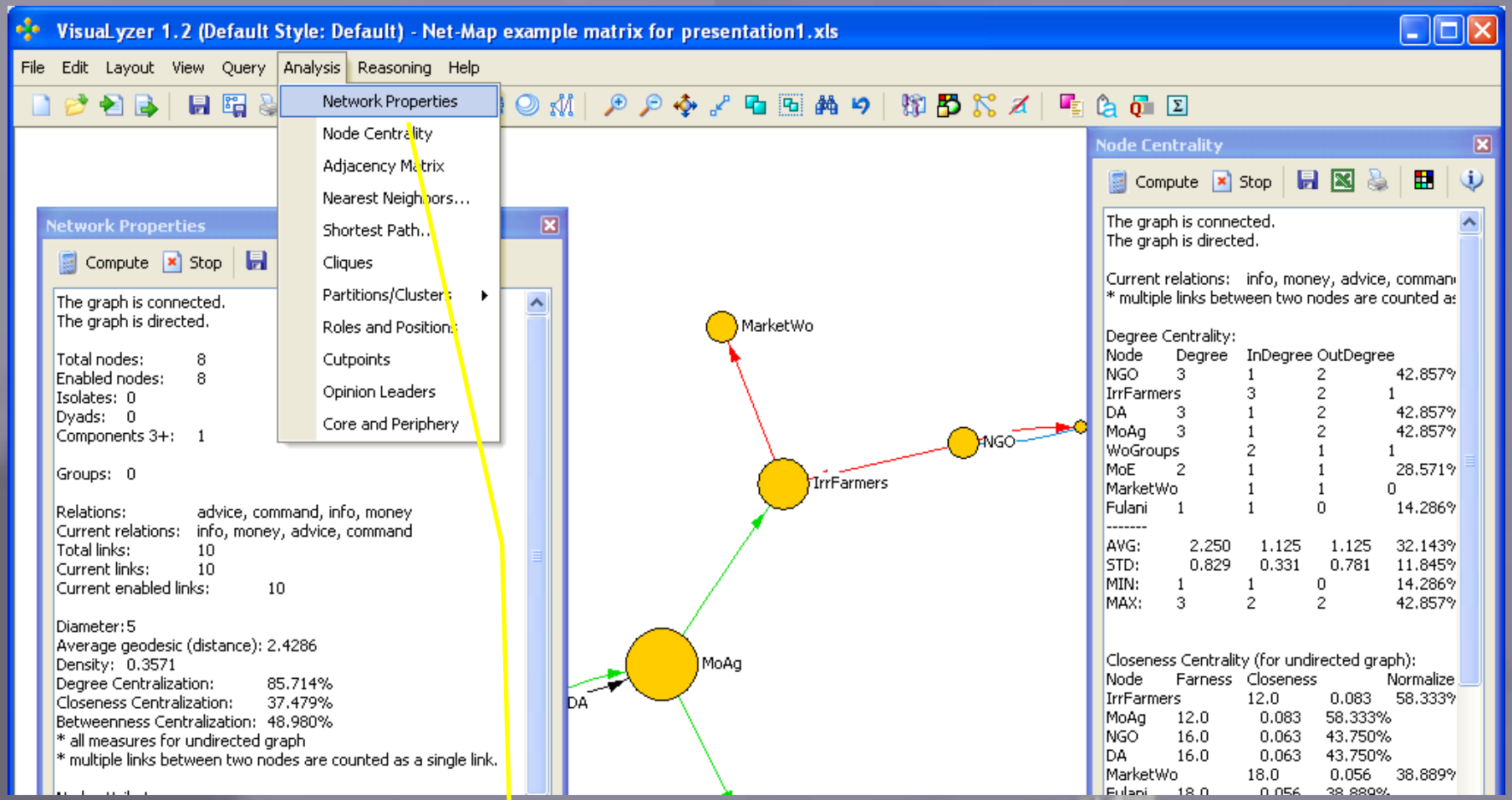
Node size according to influence tower



14. Choose “relative influence” to determine size



Start quantitative analysis



15. Click “Analysis” ;“Network Properties” and “Node Centrality” to start quantitative analysis

How to read a Net-Map

- Follow your visual intuition: What is strange, unique, striking?
- Initiate qualitative discussion with interviewee

But: Visual representation might be misleading, for more reliable analysis:

- Familiarize yourself with basic network concepts
- Transform drawn map into computerized format and embark on quantitative analysis


M+ Fisheries

Further Reading:

- Borgatti, S.P. 2003. *Centrality and Network Flow 27(1): 55-71.*
- Cross, R., S.P. Borgatti, and A. Parker. 2002. Making Invisible Work Visible: Using Social Network Analysis to Support Strategic Collaboration. *California Management Review 44(2).*
- Davies, R. 2003. Network Perspectives in the Evaluation of Development Interventions: More than a Metaphor. EDAIS Conference: New Directions in Impact Assessment for Development: Methods and Practice, November 24–25.
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