Social Network Analysis – Nicaragua Workforce Development System

7 October 2015
Global Youth Economic Opportunity Summit

www.linclocal.org
www wfconnections.org
SNA in the context of labor market assessment
### Overview:
- Conducted from May-Sept, 2015
- 3 locations: Managua, Leon, Matagalpa
- Consultations – fieldwork - results

### Method:
- Snowball nomination
- In-person enumeration / probing
- Analysis in NodeXL
Learning Objectives
1. Address critical WfD program design information needs
2. Assess specific functions within the WfD system
3. Provide comparative insight

Overview:
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Network Definition:
The workforce development network is defined to consist of actors that:
• Operate within the Departments of Managua, Leon, and/or Matagalpa;
• Strive to increase quality or quantity of jobs and/or labor supply;
• Are formal organizations;
• Do not simply employ job-seekers
• Are not simply job seekers.
defining theory of change and WfD functions

The Economy
- Economic policies
- Business practices
- Incentives to train:
  - Employers
  - Workers

Skills Demand

Information Coordination Relationships

Skills Supply

The Training System
- Provision & finance
- Skills attainment
- Incentives to train:
  - Providers
  - Timeliness

Faster Growth
More productive workforce
Better employment results
Progression up the value chain
Poverty reduction

Slower Growth
Joblessness and idleness
Skills shortages alongside glut
Low-end of production chains
Brain drain

Nicaragua WFD Functional Groupings

<table>
<thead>
<tr>
<th>Role</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private Enterprise/Coop (Employer); n=13</td>
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<tr>
<td>Employment Agency; n=6</td>
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<tr>
<td>Educational Institutions (High School, University); n=7</td>
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<tr>
<td>Labor / Trade Union; n=3</td>
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<tr>
<td>Vocational / Technical School; n=21</td>
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<td>NGO; n=32</td>
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<td>Government (Local, Central); n=8</td>
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<tr>
<td>External Stakeholder (Foundation, Donor, Research Org); n=25</td>
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<tr>
<td>Business Association; n=16</td>
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the whole network

<table>
<thead>
<tr>
<th>Network Phenomena</th>
<th>Results</th>
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</thead>
<tbody>
<tr>
<td><strong>Basic Network Features</strong></td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td>131</td>
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<tr>
<td>Ties</td>
<td>566</td>
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<td>Components</td>
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<td><strong>Network Cohesion</strong></td>
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<tr>
<td>Density</td>
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<tr>
<td>Betweenness Centrality</td>
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<td>Closeness Centrality</td>
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<td><strong>Distance between Actors</strong></td>
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<td>Diameter</td>
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<td>Average Distance</td>
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<td><strong>Strength and Clustering</strong></td>
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<tr>
<td>Reciprocity (Av / Med)</td>
<td>14% / 25%</td>
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<td>Clustering Coefficient</td>
<td>13.7%</td>
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<td><strong>Potential for Change</strong></td>
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<tr>
<td># of Actors</td>
<td>133</td>
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<td>Desired ties</td>
<td>732</td>
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<tr>
<td>Potential Density</td>
<td>4.2%</td>
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</table>

**Observations**

- Diffuse but resilient network with no single actor capable of disruption
- Weak reciprocity among actors
- Network clustered around smaller groups, more than the network as a whole
- Weak potential for change absent outside intervention

**WfD Strategies**

- Network hub development
- Incubation of pivotal actors / groups
- Strengthening network communities
- Deepening intragroup relations
- Engage sub-groups for rapid diffusion
- Forge new intergroup ties to bridge gaps
- Targeted WfD network development programming
functional groups
**WfD functions**
(weak intragroup links)

**Observations**
Weak intragroup ties among employment agencies, unions, employers

**Strategies**
- Incubation, group coordination, joint initiatives
- Business devt support to expand ties of small groups
WfD functions
(missing intergroup links)

Observations

Weak intragroup ties among employment agencies, unions, employers
Weak links between employment agencies, vocational institutions and employers

Strategies

- Incubation, group coordination, joint initiatives
- Business devt support to expand ties of small groups
- Strengthening critical links between these groups, especially via employment agencies
WfD functions (associations)

**Observations**

- Weak intragroup ties among employment agencies, unions, employers
- Weak links between employment agencies, vocational institutions and employers
- Associations have strong position in network, but weak ties to employers

**Strategies**

- Incubation, group coordination, joint initiatives
- Business devt support to expand ties of small groups
- Strengthening critical links between these groups, especially via employment agencies
- Potential node(s) for hub development
- Bolster member services / links

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**Observations**

- Weak intragroup ties among employment agencies, unions, employers
- Weak links between employment agencies, vocational institutions and employers
- Associations have strong position in network, but weak ties to employers
- Donors, govt, educational institutions have highest levels of social capital and prestige

**Strategies**

- Incubation, group coordination, joint initiatives
- Business devt support to expand ties of small groups
- Strengthening critical links between these groups, especially via employment agencies
- Potential node(s) for hub development
- Bolster member services / links
- Facilitation based strategies
- Leverage for advocacy and influence

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**Table**

<table>
<thead>
<tr>
<th>Group</th>
<th>Desired In Ties</th>
<th>Organization</th>
<th>Desired In Ties</th>
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<td>Conv.</td>
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<td>INATCC</td>
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<td>MINED</td>
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<td>INTU</td>
<td>20</td>
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<td>MNA</td>
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<td>UCA</td>
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<td>UAM</td>
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<td>Educ.</td>
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<td>U:AMID</td>
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<td>Inst.</td>
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<td>Empresarial</td>
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<td></td>
<td>Kelas</td>
<td>12</td>
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<td></td>
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<td>UNión</td>
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<td>Europa (EU)</td>
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<td>A4:CLD</td>
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<td>[MUVIS]</td>
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</tbody>
</table>

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**Diagram**

- Incubation, group coordination, joint initiatives
- Business devt support to expand ties of small groups
- Strengthening critical links between these groups, especially via employment agencies
- Potential node(s) for hub development
- Bolster member services / links
- Facilitation based strategies
- Leverage for advocacy and influence
**WfD functions (NGOs)**

### Observations
- Weak intragroup ties among employment agencies, unions, employers
- Weak links between employment agencies, vocational institutions and employers
- Associations have strong position in network, but weak ties to employers
- Donors, govt, educational institutions have highest levels of social capital and prestige
- **NGOs are entrepreneurial, eager partners but constrained by a lack of influence**

### Strategies
- Incubation, group coordination, joint initiatives
- Business devt support to expand ties of small groups
- Strengthening critical links between these groups, especially via employment agencies
- Potential node(s) for hub development
- Bolster member services / links
- Facilitation based strategies
- Leverage for advocacy and influence
- Leverage connectedness to multiple actors
- Beware of limited utility convening powerful actors
tourism subnetwork example

<table>
<thead>
<tr>
<th>Network Phenomena</th>
<th>Combined Network</th>
<th>Overall Network</th>
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<tbody>
<tr>
<td></td>
<td>Tourism Actors</td>
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</tr>
<tr>
<td>Size</td>
<td>55</td>
<td>131</td>
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<tr>
<td>Ties</td>
<td>165</td>
<td>566</td>
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<tr>
<td>Components</td>
<td>6</td>
<td>1</td>
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<tr>
<td><strong>Basic Network Features</strong></td>
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<tr>
<td>Density</td>
<td>0.05556</td>
<td>0.03324</td>
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<tr>
<td>Betweenness Centrality</td>
<td>64.618</td>
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<tr>
<td>Closeness Centrality</td>
<td>0.044</td>
<td>0.003</td>
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<tr>
<td><strong>Distance between Actors</strong></td>
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</tr>
<tr>
<td>Diameter</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Average Distance</td>
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<td><strong>Strength and Clustering</strong></td>
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<td>Reciprocity</td>
<td>0.2132</td>
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<td>Clustering Coefficient</td>
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<tr>
<td></td>
<td>0.131</td>
<td>0.137</td>
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</table>

**Observations**

- Tourism subnetwork 2X as dense as the whole network, and reciprocated relations greater. Construction similar.
- Tourism subnetwork has high involvement of pivotal actor groups (employment agencies, associations, employers).
- Agricultural subnetwork similar to whole network, but has highest levels of participation.

**Strategies**

- Indicative of potential for whole network growth
- Organize WfD initiatives around sectors for max. impact
- Leverage specific sectors of high activity to best reach pivotal actor groups
- Utilize agriculture to engage large numbers of actors
- Beware of diffusion, perhaps due to rural factors
lessons learned

- Carefully map network analysis to a theory of change or development hypothesis. (e.g. SABER model)

- Establish a clear network boundary (e.g. common goal, geography), and consider employers carefully as they are a potentially limitless population.

- Expect little regional variation in metrics between multiple networks where there is overlap among actors. (e.g. government, national NGOs)

- Consider the willingness of network actors to participate in the survey, especially in centralized environments. (e.g. INATEC)

- Develop strategies to assess potential for network growth in the absence of a baseline. (e.g. desired linkages, comparative subnetworks)
thank you

To download the full report, “Organizational Network Analysis – Nicaragua Workforce Development System”, please visit:

www.linclocal.org/tools/network-analysis

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email: psommerville@linclocal.org