

THE MECHANICS OF THE NATURAL RESOURCE CURSE

Information and Local Elite Behavior in Mozambique

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Goals

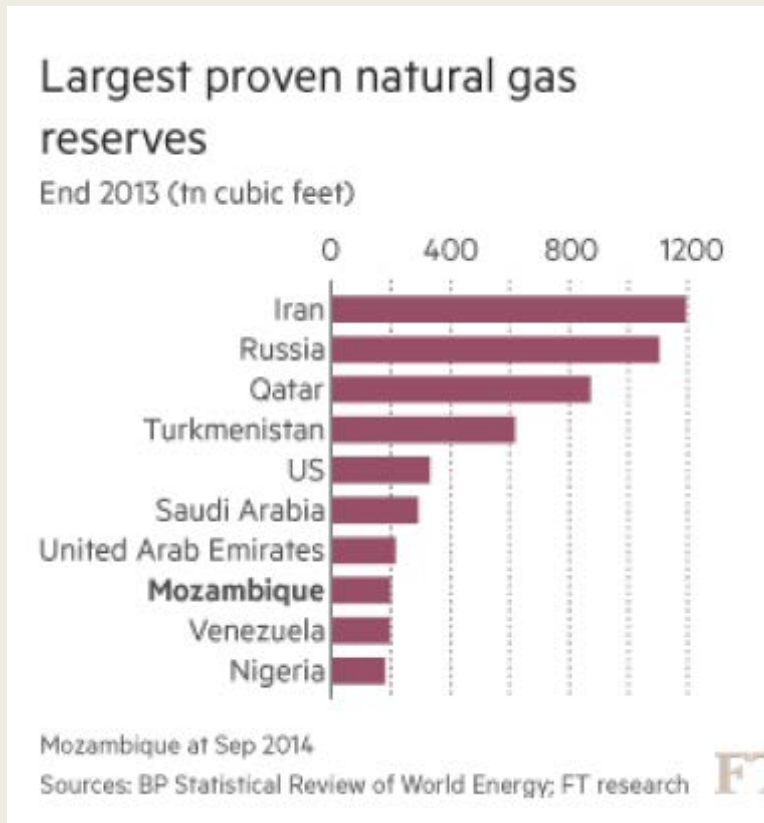
- General: Evaluate the impact of policies that inform and engage the local communities after the discovery of natural resources, i.e., involving the local communities in the management of natural resources;
 - *In the process: understand how information can be provided to the communities and how to manage expectations in face of a substantial discovery;*
- Test known theoretical mechanisms of the natural resource curse at the local level;
- Through the evaluation of different interventions:
 - *Information targeting the local elite;*
 - *Information targeting the local elite and the communities;*
 - *Information targeting the local elite and the communities + deliberation sessions.*

Literature

- Negative relation between natural resource exports and GDP growth, which depends on quality of institutions (Sachs and Warner 1995, Mehlum et al. 2006);
- Mechanisms:
 - *Dutch Disease (Corden and Neary 1982);*
 - *Decentralized move towards rent-seeking activities (Tornell and Lane 1999);*
 - *Centralized/political resource curse: politicians move towards inefficient policies in the hope of maintaining power (Robinson et al. 2006);*
- Pollution may trigger negative effects at the local level in Ghana (Aragon and Rud 2016)
- Small effect of oil windfalls on municipal investment in Brazil (Caselli and Michaels 2009);
- After the discovery of oil reserves in São Tomé and Príncipe: vote-buying (Vicente 2010) and the creation of a National Forum (Humphreys, Masters and Sandbu 2006).

Why Cabo Delgado, Mozambique?

- Substantial discoveries of natural gas in the period 2011-2014, with the potential to transform Mozambique into a global player in natural gas
- Growth predicted at 24% per year 2021-2025 (IMF)



Why Cabo Delgado, Mozambique?

ANADARKO ENCOMENDOU PROJECTO PARA UNIDADE DE PROCESSAMENTO DE GÁS EM CABO DELGADO

Categoria: Arquivo1 Escrito por Edmundo Galiza Matos Visitas: 1304



Um consórcio em partes iguais constituído pela JGC Corp e JGC Corp foi contratado pela Anadarko para a elaboração do projecto de processamento de gás natural em Moçambique, divulgado em Irving pelo grupo Fluor.

A unidade ficará será construída na praia de 2000 quilómetros a norte da capital de Moçambique, cujo mar se localiza o bloco petrolífero Moçambique Area 1, subsidiária do grupo Anadarko Petroleum, funciona como operador. De acordo com o comunicado, o contra

Galp Energia: Exploração em Moçambique é "maior projecto de gás do mundo"

A exploração de gás natural na província de Cabo Delgado, em Moçambique, "é o maior projecto de gás do mundo em [fase de] gestação", afirmou o presidente da Galp Energia, Manuel Ferreira de Oliveira, esta quarta-feira em Lisboa.



Why Cabo Delgado, Mozambique?

RESERVAS DE GRAFITE EM BALAMA, CABO DELGADO, EXCEDEM AS DO RESTO DO MUNDO

Categoria: Arquivo1 Visitas: 4063



A empresa mineira australiana Syrah Resources re- de toneladas os recursos em grafite existentes no | de Balama, bem como 2,7 milhões de toneladas de acordo com um comunicado divulgado segunda-fei

No documento, a empresa australiana adianta que existentes naquela concessão mineira em Moçambi mundiais de grafite, que no final de 2012 se situav toneladas, de acordo com o Departamento de Geol América.

"A Syrah pretende fazer com que Balama seja o m. grafite a um preço baixo, ultrapassando a China, c expansão um produto de elevada qualidade", pode

Mais rubis descobertos em Montepuez

DOMINGO, 21 AGOSTO 2016 14:13 | REDACÇÃO



Mustang Resources encontrou mais 19 pedras

A australiana Mustang Resources descobriu um novo depósito de rubis em Montepuez, província de Cabo Delgado, na sequência da recolha de amostras em diversos pontos da concessão, informou a empresa em comunicado, citado pela Macauhub.

Information provided

- What are natural resources and the importance of its sustainable exploration;
- Resources available in Cabo Delgado;
- Detailed description of the discovery of natural gas in the province:
 - *What is natural gas? Who discovered it?*
 - *Extraction plans*
 - *Initial investment requirements;*
- Benefits that the communities can expect;
- Legal environment - simplified.

Institutional support

- Provincial Government of Cabo Delgado;
- Aga Khan Foundation;
- EITI – Extractive Industry Transparency Initiative;
- UPC – Provincial Farmers’ Union – Cabo Delgado;
- Catholic University of Mozambique;
- Cristian Council of Mozambique;
- Islamic Council;
- Newspaper @Verdade;
- ASPACADE – Association of the Paralegals in Cabo Delgado.

CAPACITAÇÕES SOBRE RECURSOS NATURAIS

Em colaboração com:



Information to the leader

- Individual training with the leader;
- Visual support: images and pictures;
- Delivery of a flyer with the main messages;
- Questions & answers session.



Local chief receiving the training.

Information to the leader and the community

- Community and leader training through a village meeting;
- Invitations previously distributed to the members of community committees and general population;
- Visual support: images and pictures.



Community receiving the training.

Information to the leader and the community

- Community theatre – family discussing the discovery of natural gas after hearing the news through the radio;
- Delivery of a flyer with the main messages;
- Questions & answers session.



Flyer being distributed.

Deliberation session

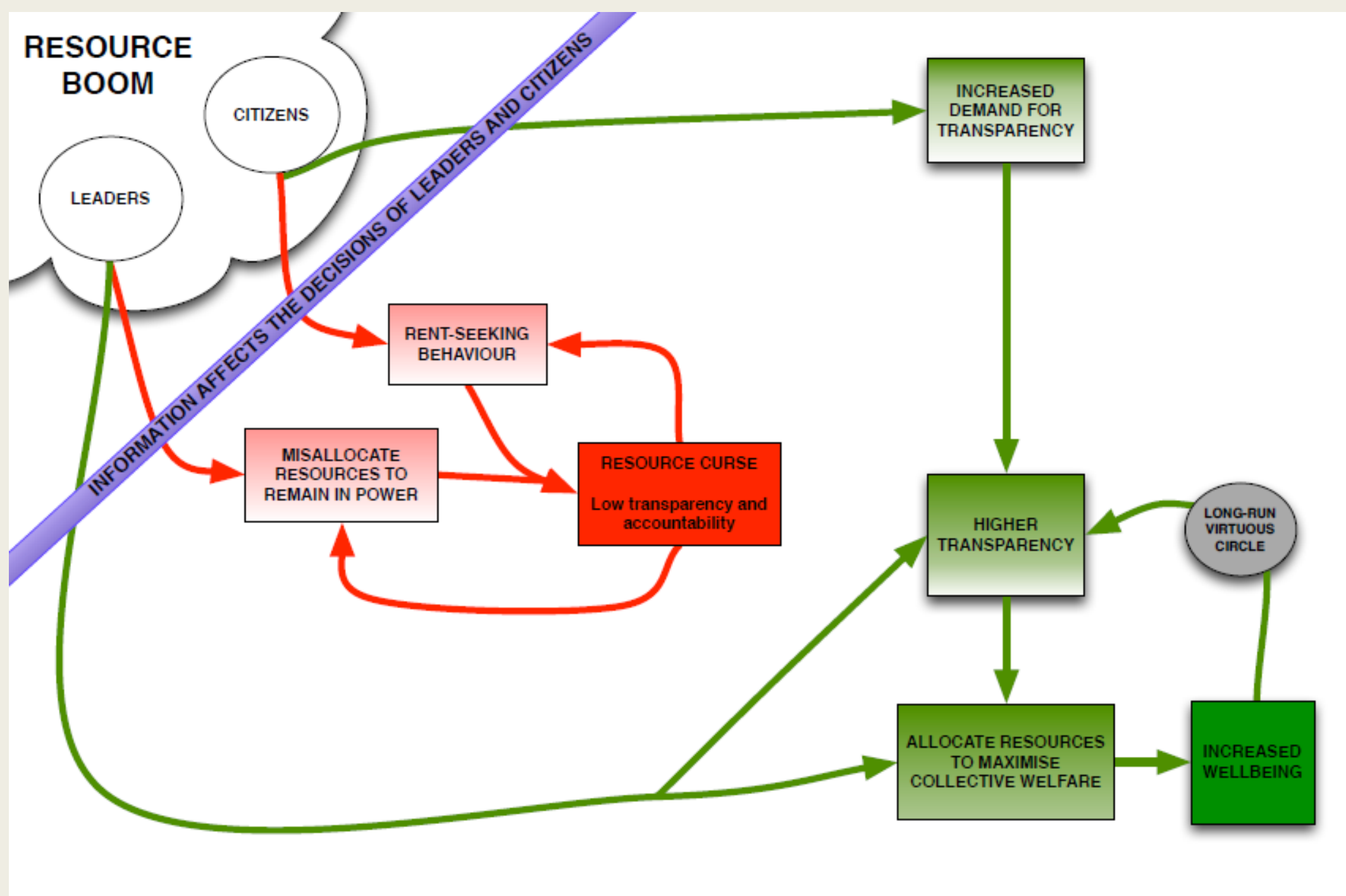
- Immediately after the training to the leader and the community;
- Creation of small work groups (5-10 elements each);
- Goal: name and order the top 3 priorities for investment in the community;
- Results of the deliberations will be handed to the district administrator and provincial government.



Discussion in a deliberation group.

Theory of change

RESOURCE BOOM

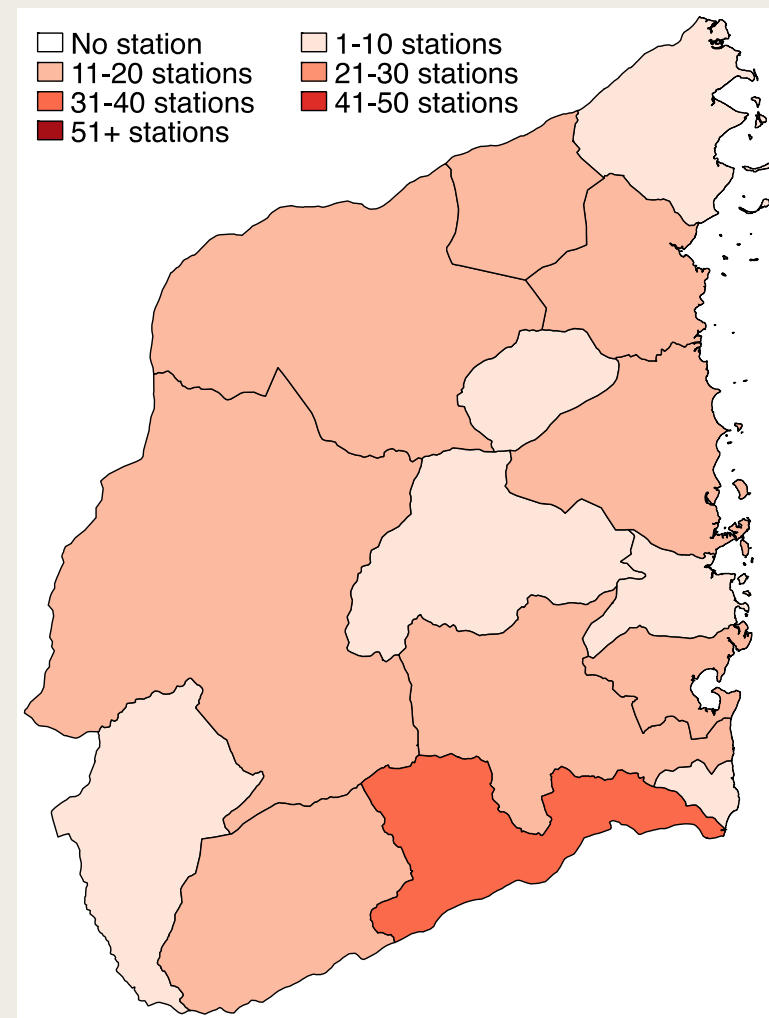
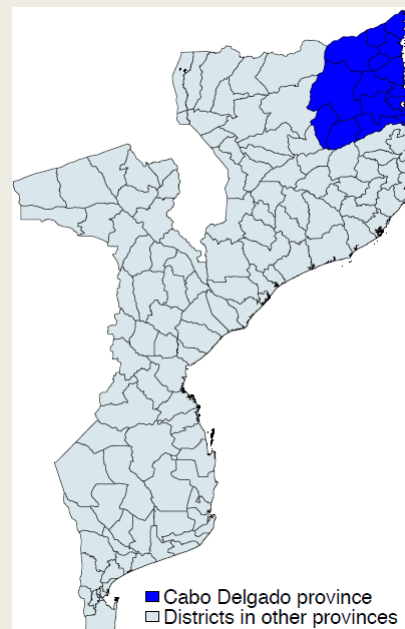


Methodology

- Randomized controlled trial (RCT);
- Allows for the identification of a causal relation between the tested interventions and economic and social outcomes;
- 200 sampled communities were randomly allocated to one group:
 - *Group of information to the leader (50 communities);*
 - *Group of information to the leader and to the community (50 communities);*
 - *Group of information to the leader and to the community + deliberation sessions (50 communities);*
 - *Control group (50 communities).*

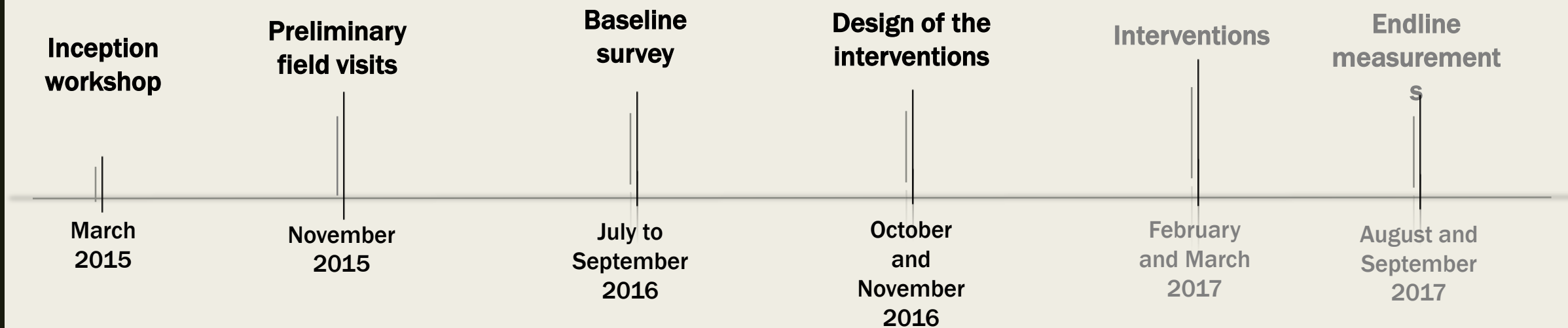
Sampling

- Inclusion of all districts of the Cabo Delgado Province (excluding Ibo district);
- Random selection of 200 polling stations (and its corresponding communities), stratified by:
 - *12 urban communities (cities of Pemba and Montepuez)*
 - *23 semi-urban communities*
 - *165 rural communities*



Number of sampled polling stations per district.

Timeline



Baseline survey

- Survey conducted to 10 representative households within each community:
 - *Demographic characteristics and household composition;*
 - *Knowledge about natural resources;*
 - *Aspirations and expectations about the future;*
 - *Social capital and community engagement;*
- Similar survey conducted to each village leader;
- Community survey:
 - *Infrastructure;*
 - *Existence of resources;*
 - *Social structure.*

Household head characteristics

	All	Rural	Semi-urban	Urban
Female	0.25 [0.43]	0.23 [0.42]	0.30 [0.46]	0.44 [0.50]
Age	44.84 [16.29]	44.68 [16.29]	46.49 [16.80]	44.21 [15.43]
HH size	5.67 [3.11]	5.61 [3.15]	5.99 [2.85]	5.89 [2.95]
Education	3.82 [3.39]	3.56 [3.12]	4.38 [3.87]	6.29 [4.62]
Monthly income	5029.98 [9915.52]	4623.33 [9813.02]	5824.98 [9747.95]	8854.44 [10614.76]
Observations	2070	1710	220	140

Note: The values are means. Standard deviations in brackets.

Leader characteristics

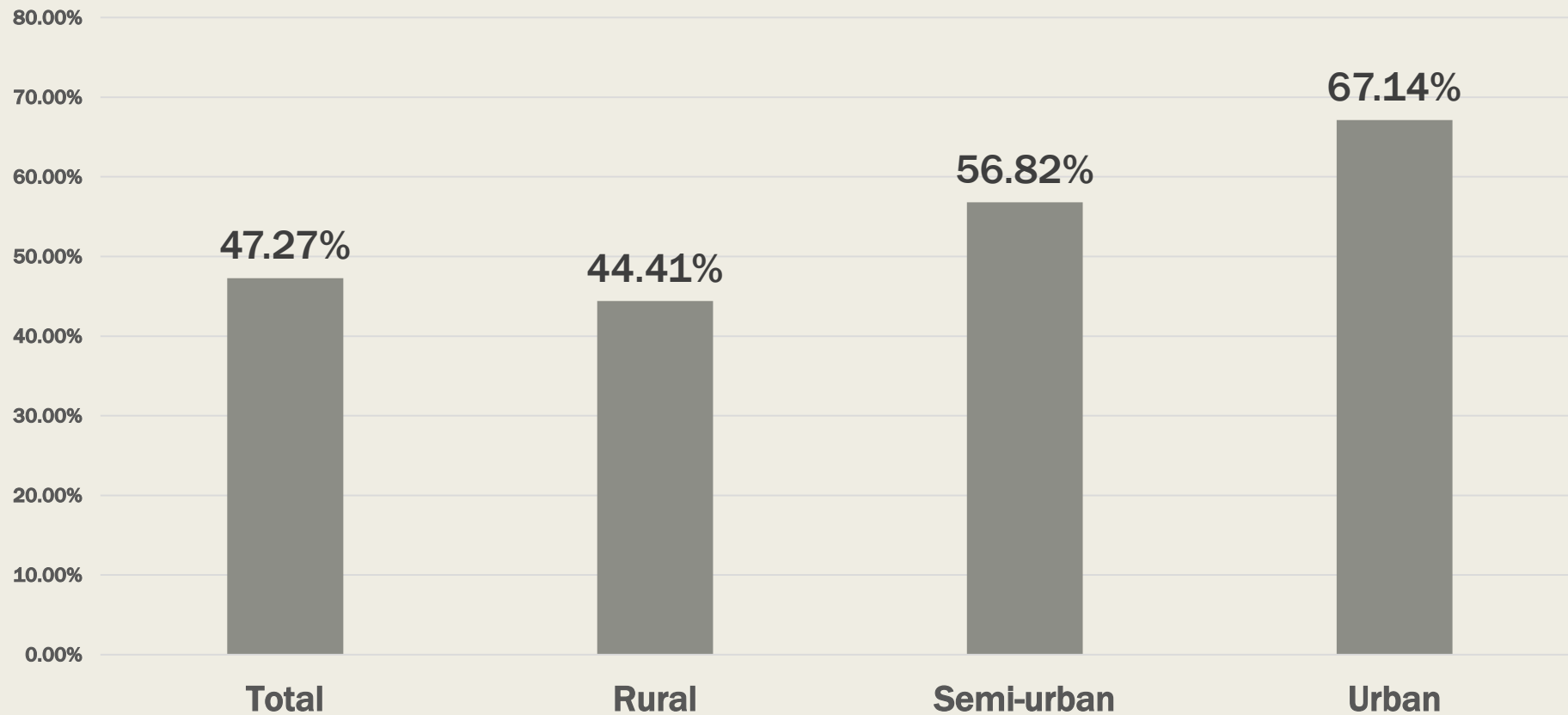
	All	Rural	Semi-urban	Urban
Female	0.04 [0.20]	0.02 [0.13]	0.05 [0.22]	0.31 [0.48]
Age	53.93 [9.96]	53.34 [10.25]	56.76 [9.31]	56.85 [5.44]
HH size	6.7 [3.60]	6.52 [3.65]	7.71 [2.72]	7.23 [4.04]
Education	5.70 [2.78]	5.37 [2.72]	6.57 [2.27]	8.46 [2.63]
Monthly income	3456.15 [7027.14]	2470.76 [2452.66]	6385.62 [13847.04]	11230.77 [17864.79]
Years as leader	9.00 [9.67]	9.47 [9.80]	7.48 [9.65]	5.30 [7.28]
Observations	199	165	21	13

Note: The values are means. Standard deviations in brackets.

Village characteristics

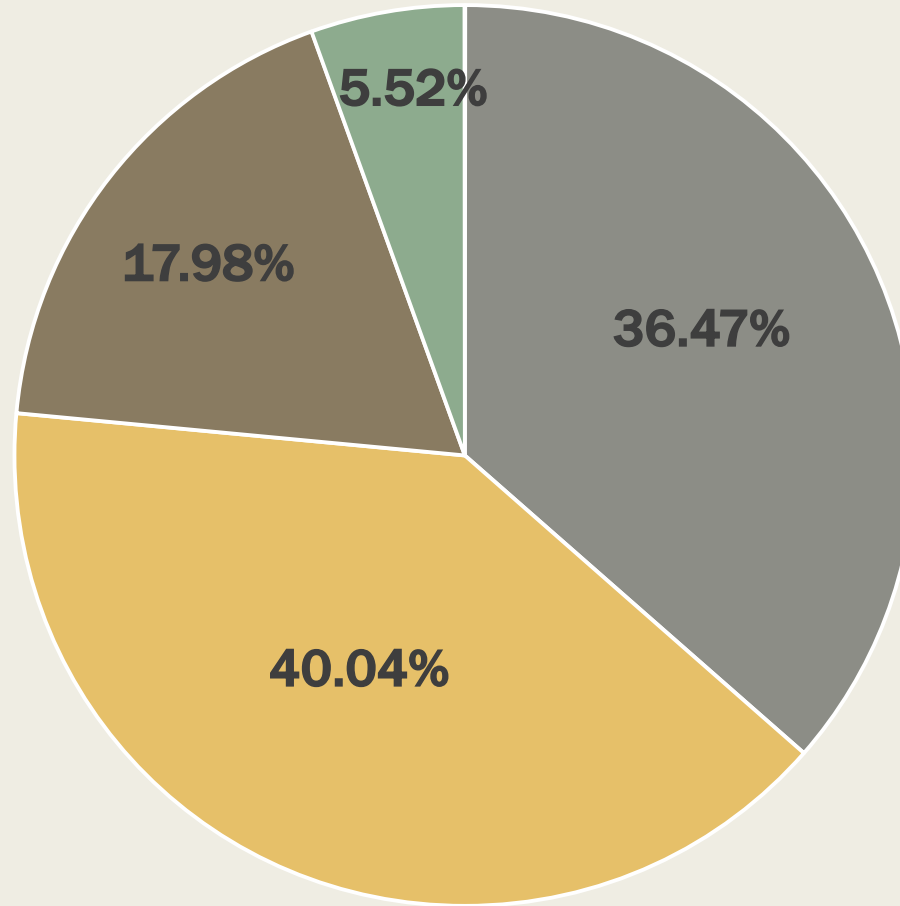
Infrastructure	Percentage
Kindergarten	21.74%
Primary School	97.58%
Lower secondary school	85.02%
High School	8.21%
Health centre	27.05%
Facilitator	65.05%
Water pump	61.84%
Market	59.90%
Police Station	14.49%
Church, mosque, temple	98.07%
Room for community activities	57.49%
Electricity	23.19%
Sewage	6.76%

Heard about natural gas?



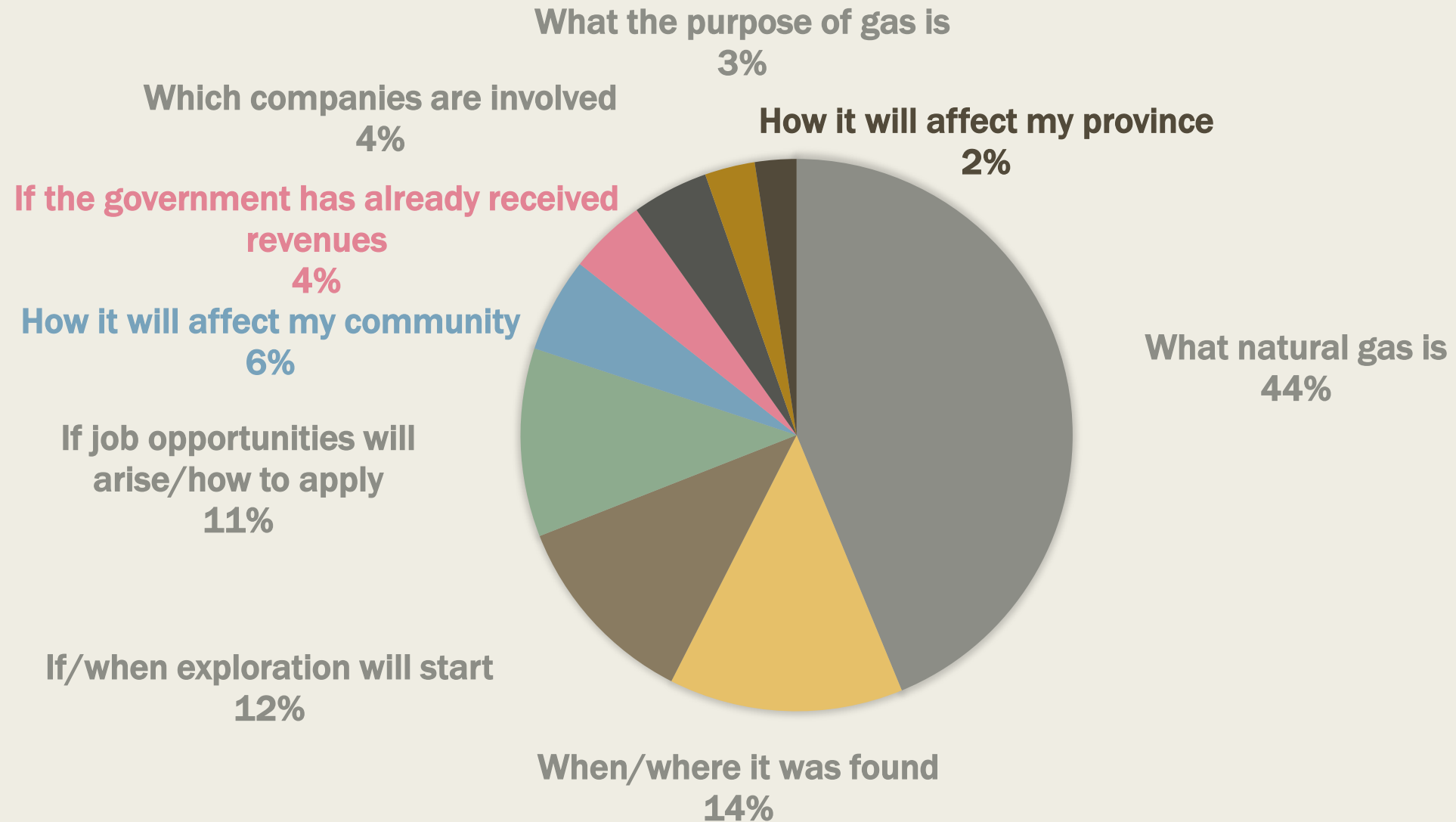
- Leaders tend to be more informed (83%)

Is there demand for information?



■ Not informed ■ Somewhat informed ■ Very informed ■ Fully informed

Types of information demanded



What drives knowledge among villagers?

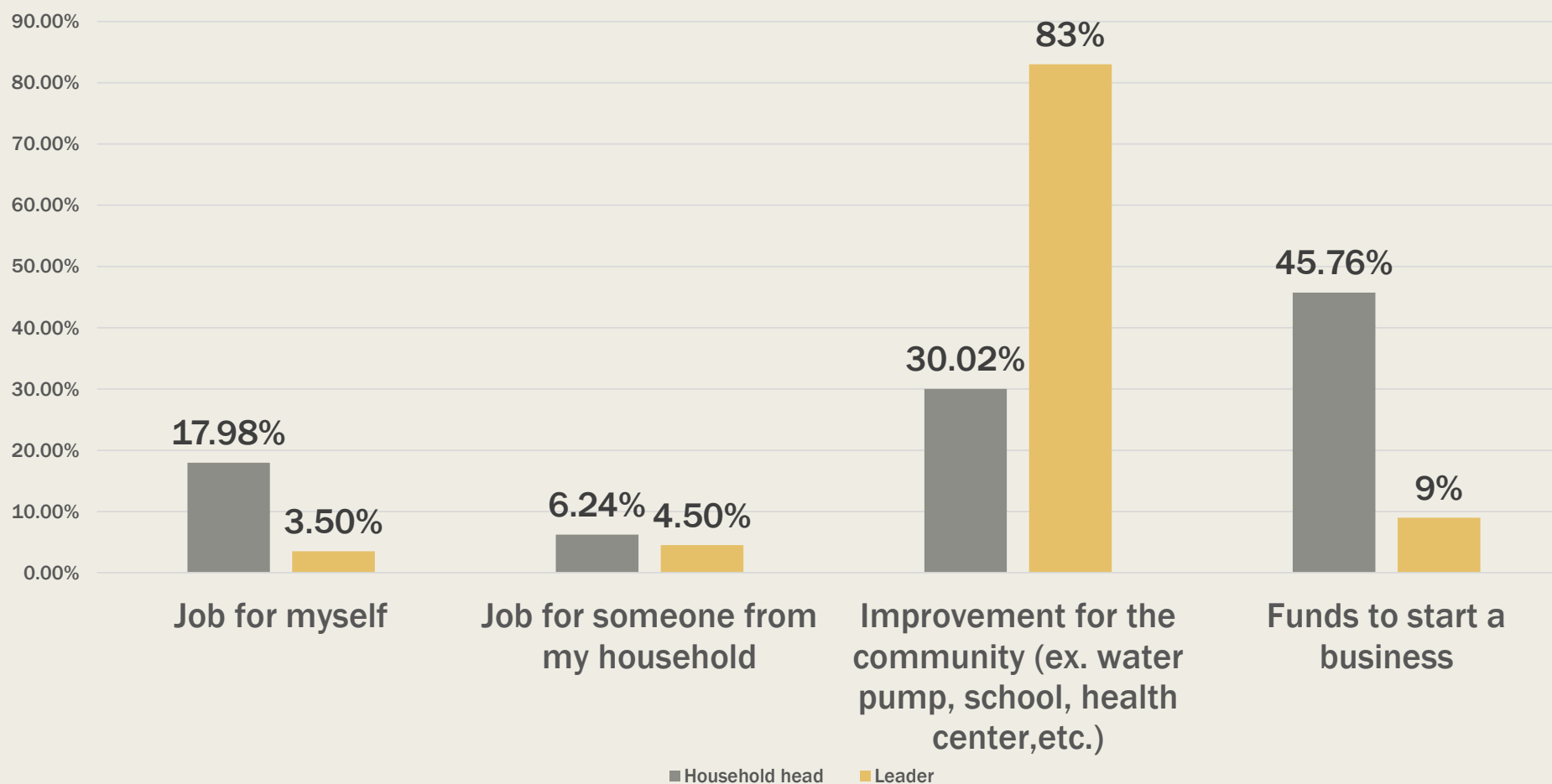
	Respondent heard about the natural gas discovery			
	OLS	OLS	OLS	OLS
	(1)	(2)	(3)	(4)
Female respondent	-0.191***	-0.191***	-0.184***	-0.153***
	[0.024]	[0.024]	[0.024]	[0.026]
Age in years	0.002***	0.002***	0.002***	0.002***
	[0.001]	[0.001]	[0.001]	[0.001]
Household size	0.012***	0.012***	0.011***	0.009***
	[0.003]	[0.003]	[0.003]	[0.003]
Primary education	0.112***	0.111***	0.100***	0.077***
	[0.022]	[0.022]	[0.022]	[0.024]
Secondary or higher education	0.386***	0.382***	0.368***	0.341***
	[0.038]	[0.038]	[0.039]	[0.041]
Income (in thousands)	0.002**	0.002**	0.001*	0.002**
	[0.001]	[0.001]	[0.001]	[0.001]
Semi-urban	0.037	0.035	0.032	0.014
	[0.032]	[0.032]	[0.031]	[0.030]
Urban	0.215***	0.211***	0.231***	0.247***
	[0.069]	[0.068]	[0.067]	[0.067]
District dummies	Yes	Yes	Yes	Yes
Observations	2032	2017	1999	1688
R-squared	0.338	0.339	0.348	0.384

What drives knowledge among villagers?

	Respondent heard about the natural gas discovery			
	OLS (1)	OLS (2)	OLS (3)	OLS (4)
General trust		-0.046** [0.020]	-0.040** [0.020]	-0.026 [0.020]
Knows high level official/influential person			0.074*** [0.021]	0.076*** [0.022]
Knows religious leaders			0.015 [0.024]	0.000 [0.026]
Knows community leaders			0.026 [0.022]	0.014 [0.025]
Active member or leader in a group				0.111*** [0.021]
Attitude towards bribes				-0.013 [0.023]
Public funds go to influential people				0.010 [0.019]
District dummies	Yes	Yes	Yes	Yes
Observations	2032	2017	1999	1688
R-squared	0.338	0.339	0.348	0.384

Anticipating deliberations

What would you ask the governor of the province?



Preliminary results - summary

- Lack of information about natural resources among citizens (less so among leaders); simple information is demanded;
- Knowledge about natural resources discovery is closely related to demographic characteristics (gender, age, education, income) and geography;
- Individuals that participate actively in village groups and organizations and that have stronger ties with local leaders show better knowledge about natural resources;
- Leaders show preference for community improvements while citizens prefer to have funds to start a business.

Endline measurements - survey

- August and September 2017;
- Endline survey to the same 10 targeted respondents per village;
- Endline survey conducted to the community leaders;
- Community survey;
- All three questionnaires similar to the baseline.

Endline measurements – behavioral activities

- Behavioral measurement of **leaders'** outcomes:
 - *Dictator game to measure willingness to share resources with local citizens;*
 - *Trust game;*
 - *Structured community activities (SCAs):*
 - a. Utilization of a gift for the community handed to the leader*
 - b. Appointments of citizens aimed at specific tasks (IQ test)*
 - c. Auction for participating to a lunch with province-level party representatives versus agricultural training*

Endline measurements – behavioral activities

- Behavioral measurement of **villagers'** outcomes:
 - *Trust game;*
 - *Public good game to measure social cohesion;*
 - *Structured community activities (SCAs):*
 - a. Citizens' propensity to contribute to matching grants;*
 - b. Meeting to measure community participation and involvement;*
 - c. Village-level auction to participate in a lunch with province-level party representatives versus agricultural training*

Concluding remarks

- Surprisingly strong support at the province level for the project;
 - *Clear perception that this type of project enables increasing bargaining power of provincial authorities in the national arena, in a context of uncertain regional benefits;*
- Preliminary results from baseline: clear demand for information by the citizens;
- Demand by the local government (district and province level) to receive and disseminate information about future plans;
- Positive feedback from the communities participating in the trainings and deliberation sessions, with large audiences attending the meetings;
- Results of the impact evaluation expected by the beginning of 2018: stay tuned!