

FIG

FIG WORKING WEEK 2017

Helsinki Finland

29 May - 2 June 2017

Presented at the FIG Working Week 2017,
May 29 - June 2, 2017 in Helsinki, Finland

THE IMPORTANCE OF RRR IN CADASTRAL SYSTEM

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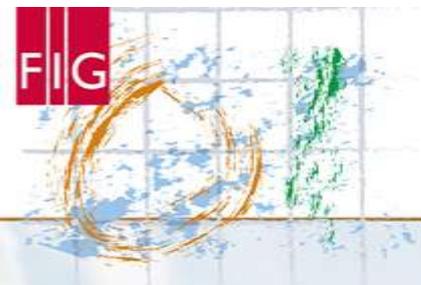


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Contents

- Background
- Case study themes
- Results and Discussion
- Conclusion



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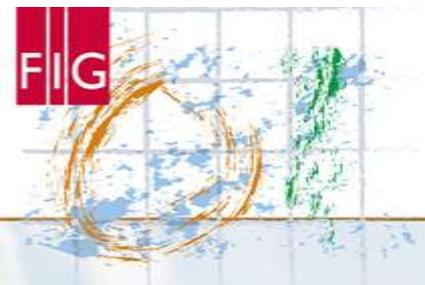


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Background

(RRR-Right, Restriction and Responsibility)



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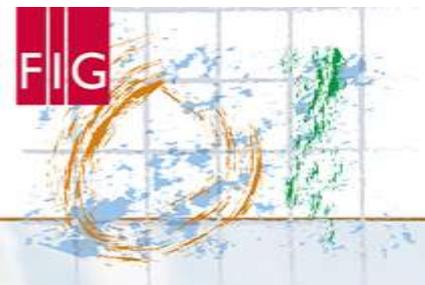


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Background

(RRR-Right, Restriction and Responsibility)

These components can be described as follows:

- What the RRR is in law?
- Who (or which organization) holds the RRR or is subject to it?,
- When the RRR came into effect? or when it ceased to apply?
- Where the land or real property is that it applies to, including its extent (Gogolou, 2013).



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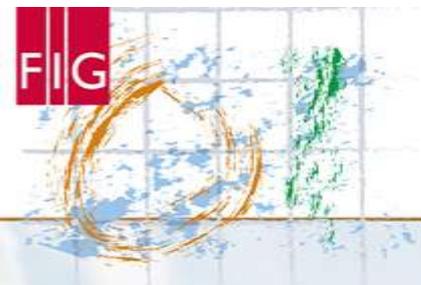


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RRR and Cadastral system

Interests in relation to land can be characterized as identifying,

- a) things that you can do (rights),
- b) things that you can't do (restrictions), and
- c) things that you have to do (responsibilities)

-(Grant, 2014).

A cadastral system can be suitably defined as a parcel-based and up-to-date land information system containing a record of interests in land e.g. RRRs(Williamson, Enemark, Wallace, & Rajabifard, 2010).



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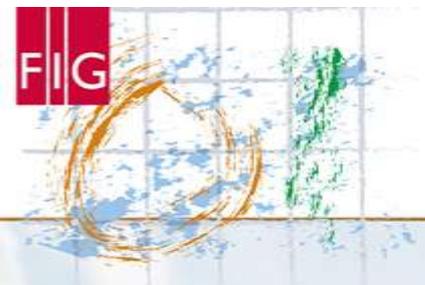


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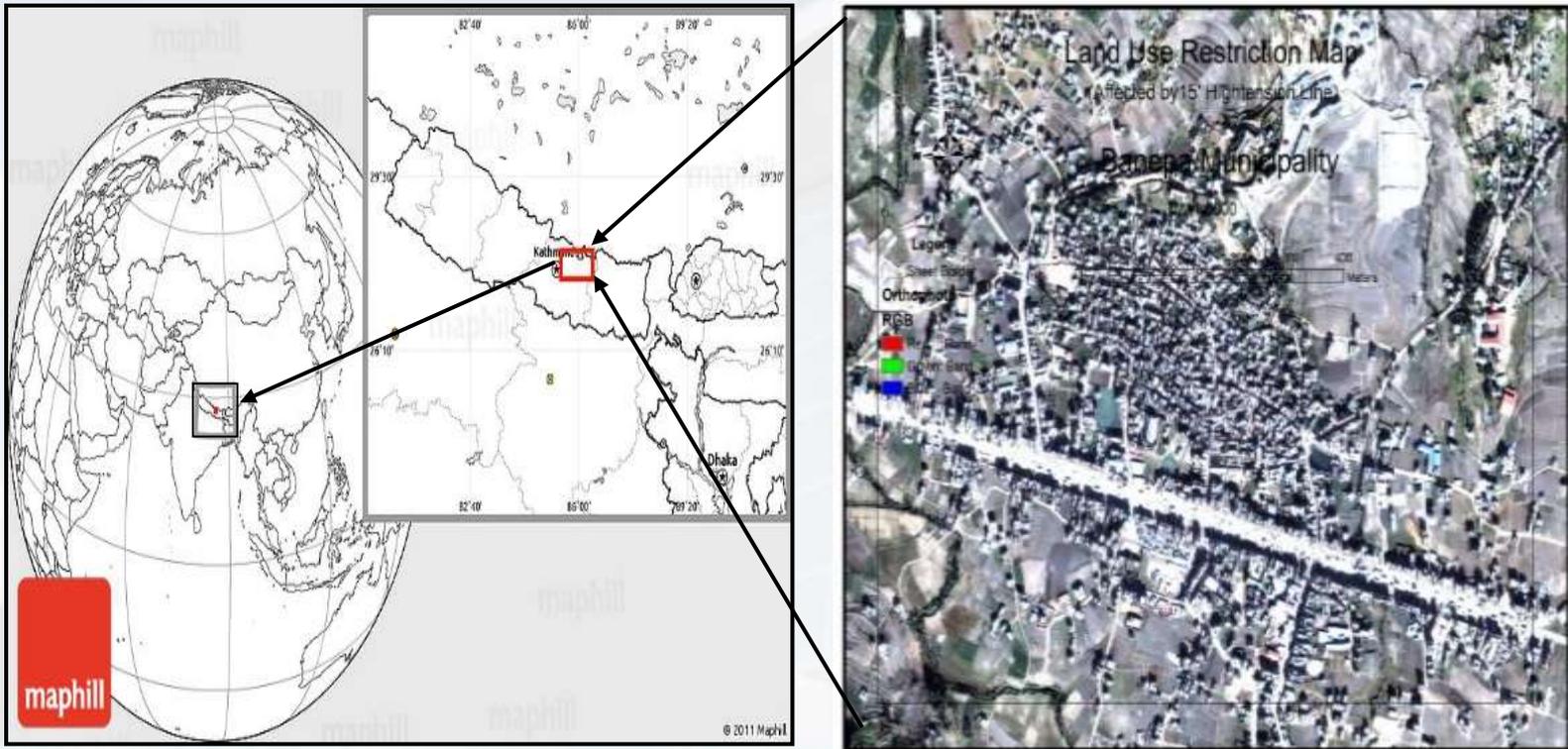
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Case study area

- Banepa Municipality, Kavre District in Nepal



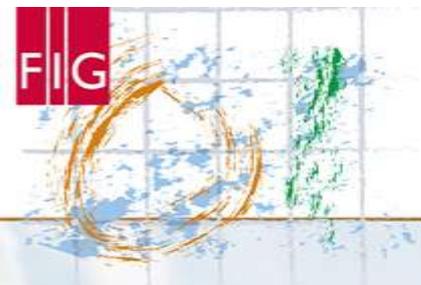


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Case study Themes

1. Araniko Highway,
2. Punyamata River,
3. Chandeshwori Stream and
4. High-tension (power line)
-which belongs to cadastral map sheet of 157-1324,
located in Banepa Municipality, Kavre District in Nepal



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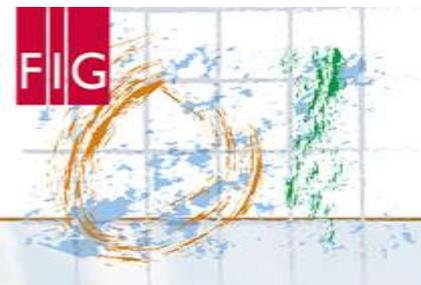


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Case Area-1 :Araniko Highway



Axel R-D 2016



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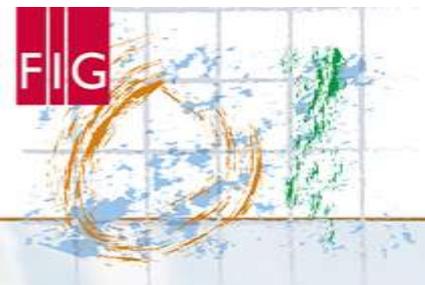


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Case Area-2, 3 : Punyamata River and Chandeshwori Stream



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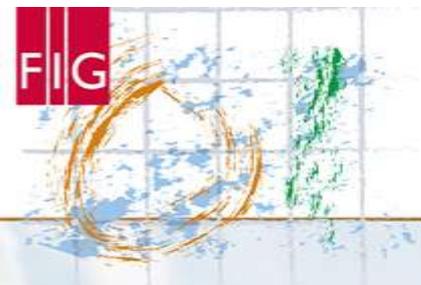


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Case Area-4 :High-tension (power line)



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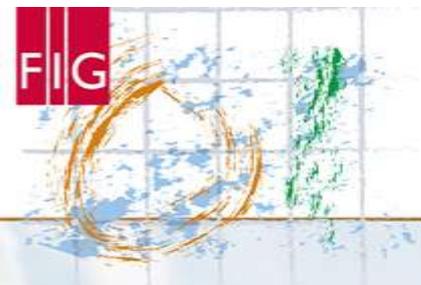


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Norms/ Rules of Nepal

S. N.	Case Issues	Norms/ Rules		Remarks
		Local Government	National Standard	
1	Araniko Highway	22.86 Meters/ 75 feet	25 Meters / 82 feet	From center of highway
2	Punyamata River	15 Meters	-	From Bank of River
3	Chandeshori Stream	7 Meters	-	From Bank of Stream
4	High-tension (Power line) 132kv.	-	9 Meters/ 30 feet	In between two end power line



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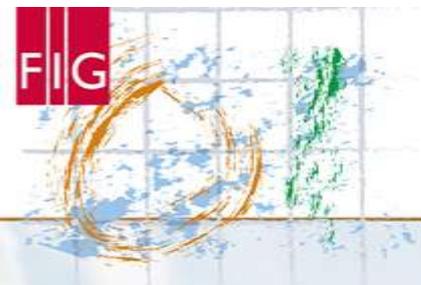


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Case Area-1 :Araniko Highway



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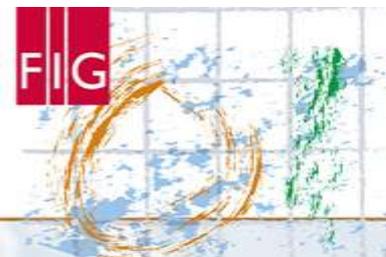
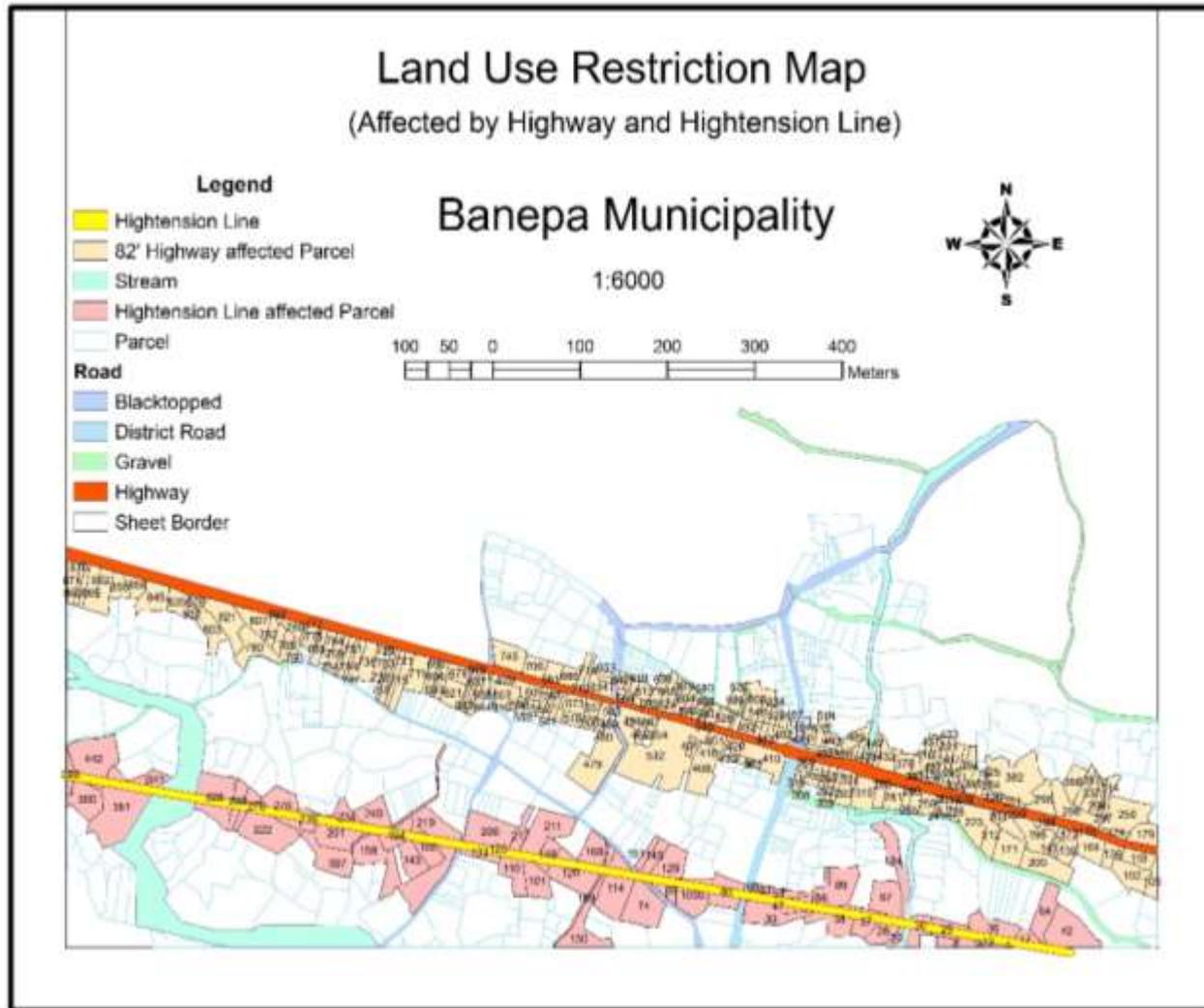


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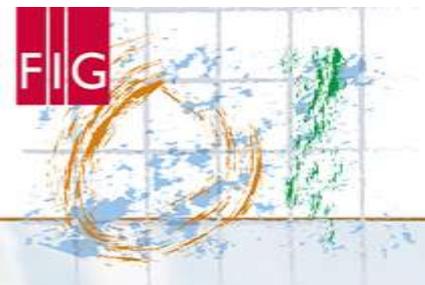


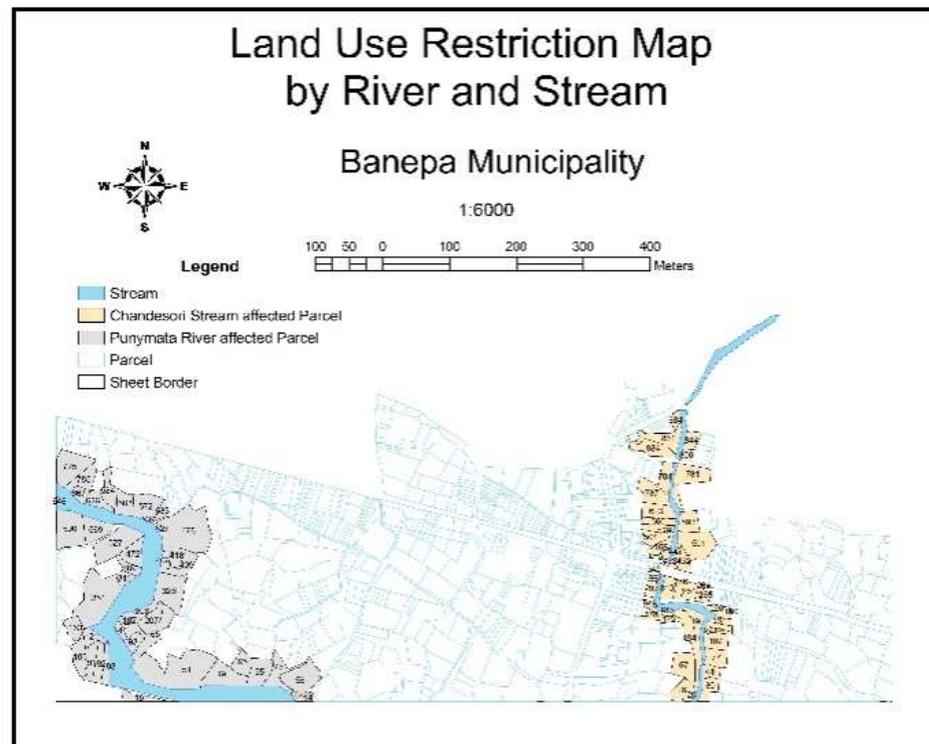
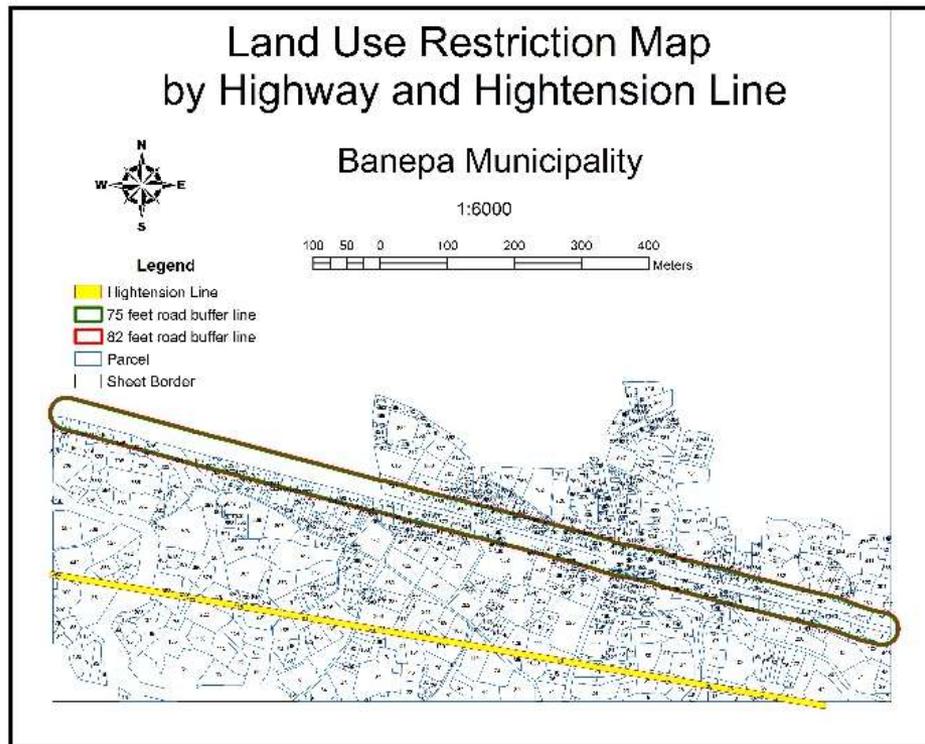
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Map of Case study area and Themes



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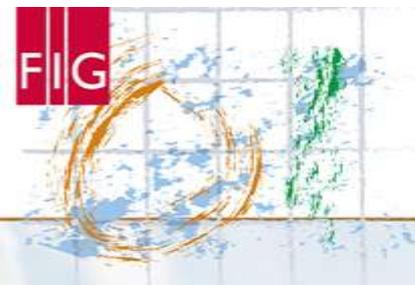


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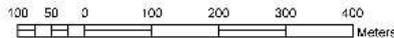
Restrictions Maps: Araniko Highway and High tension line

Land Use Restriction Map

(Affected by 82' Araniko Highway)

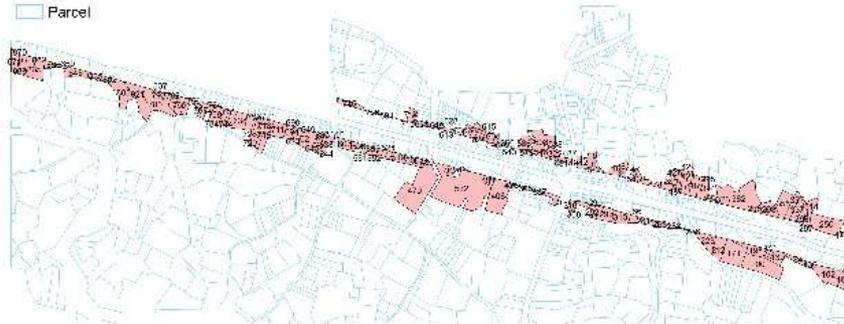
Banepa Municipality

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Legend

- Sheet Border
- 82' Parcel Full right
- Parcel

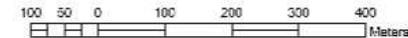


Land Use Restriction Map

(Affected by 15' Hightension Line)

Banepa Municipality

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Legend

- Sheet Border
- Hightension Parcel Full right
- Parcel



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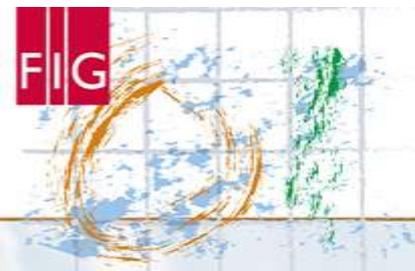


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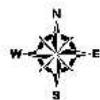
Restrictions Maps: River, Stream and Highway

Land Use Restriction Map

(Affected by Stream and River)

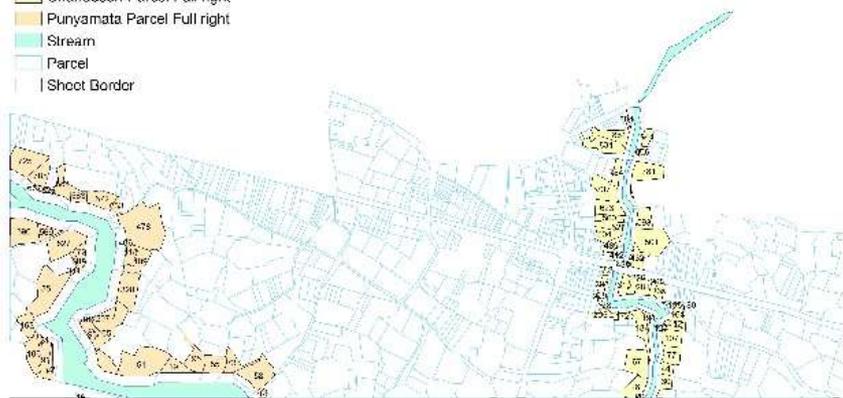
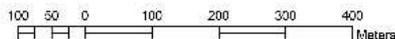
Banepa Municipality

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Legend

- Chandesori Parcel Full right
- Punyamata Parcel Full right
- Stream
- Parcel
- Sheet Border



Land Use Restriction Map

(Affected by 75 feet Highway)

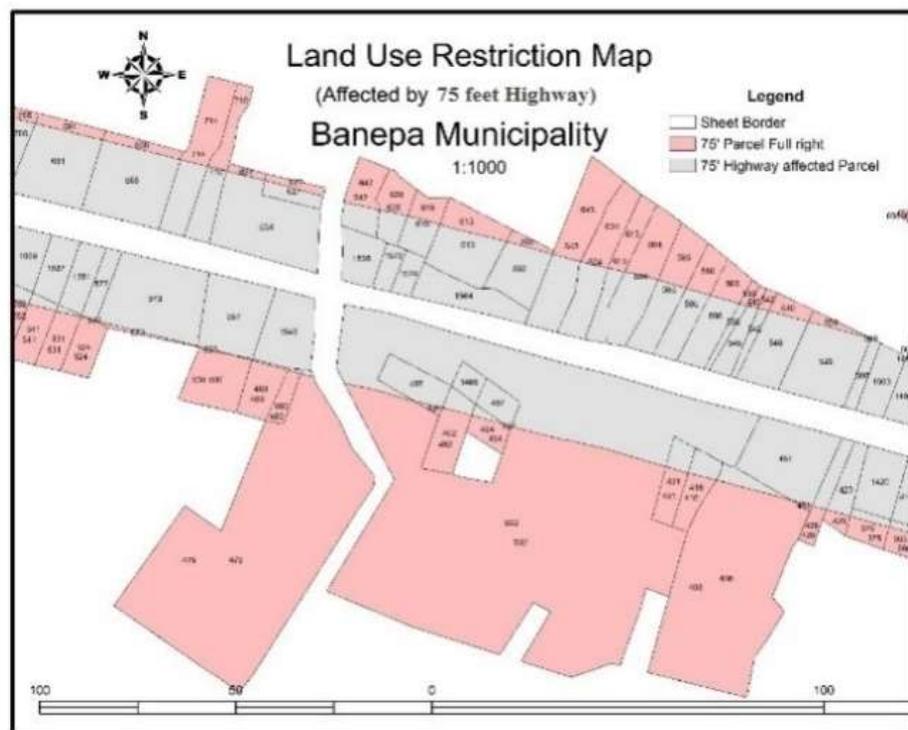
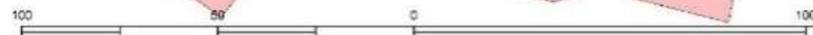
Banepa Municipality

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Legend

- Sheet Border
- 75' Parcel Full right
- 75' Highway affected Parcel



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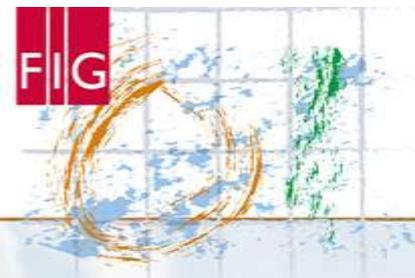
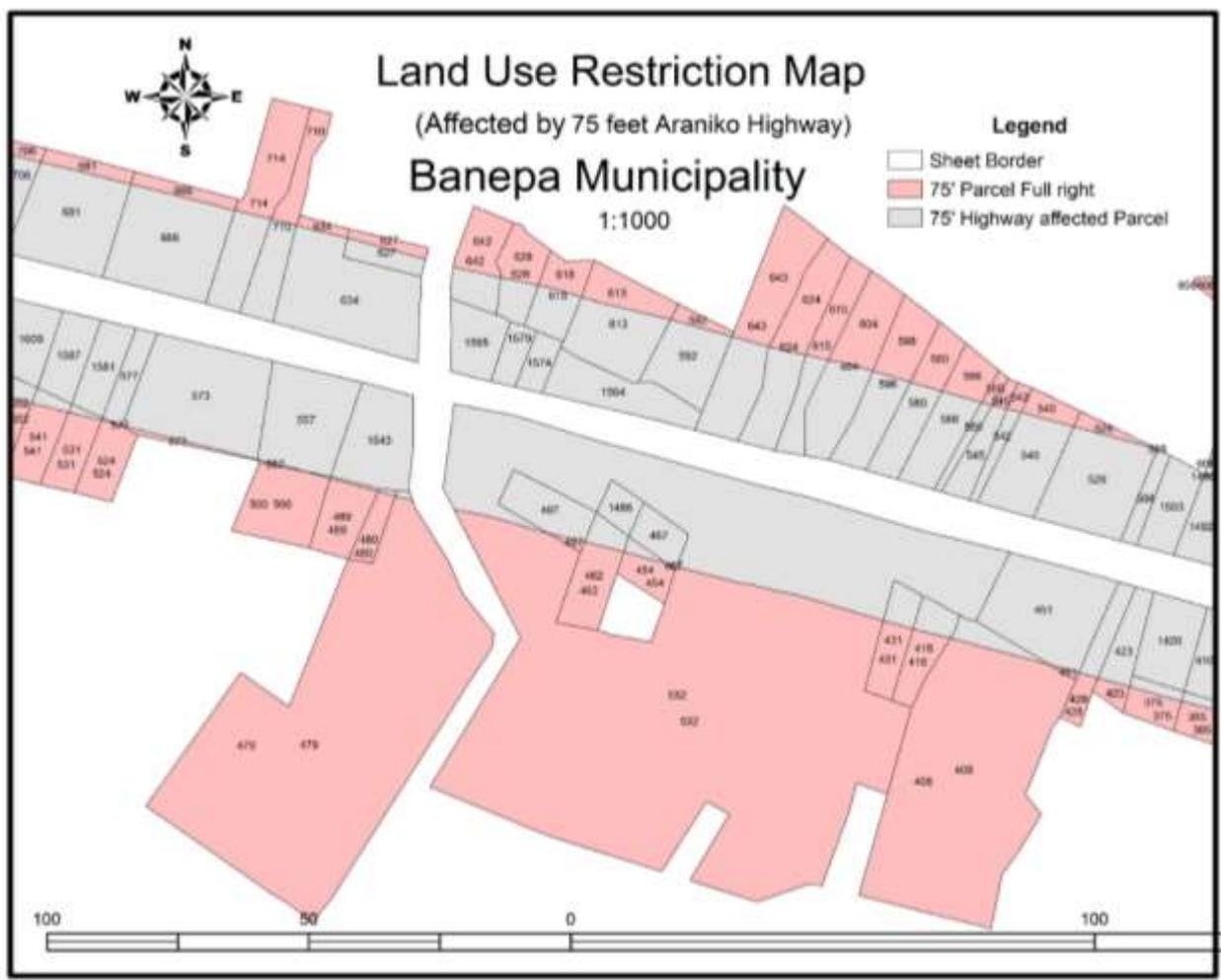


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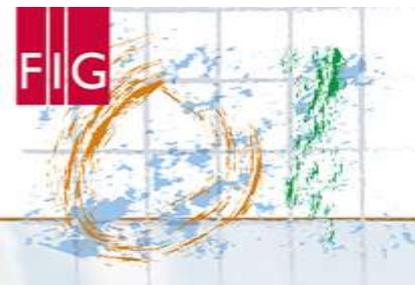


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Parcel Area related to 75' Araniko Highway

Parcel FID	Parcel Area		Parcel FID	Parcel Area	
	Certificate	Corrected		Certificate	Corrected
102	1034.56	927.42	573	488.31	16.90
105	441.09	385.22	577	76.90	0.07
118	612.42	0.47	580	190.88	73.64
136	480.65	116.01	592	203.50	25.85
139	472.08	371.98	596	248.43	114.00
141	110.11	86.66	598	264.73	144.38
152	104.88	74.98	604	295.23	143.04
159	66.40	39.88	607	482.86	302.13
164	859.07	251.61	608	980.12	951.36
171	1051.42	1051.42	610	109.88	57.48
179	692.30	108.38	613	304.70	97.35
198	1076.06	439.75	615	166.50	91.97
200	1769.11	1474.65	618	130.04	56.15
212	705.59	537.28	621	661.48	651.34
223	1108.40	578.48	624	277.65	145.01
226	116.70	30.75	627	87.61	31.76



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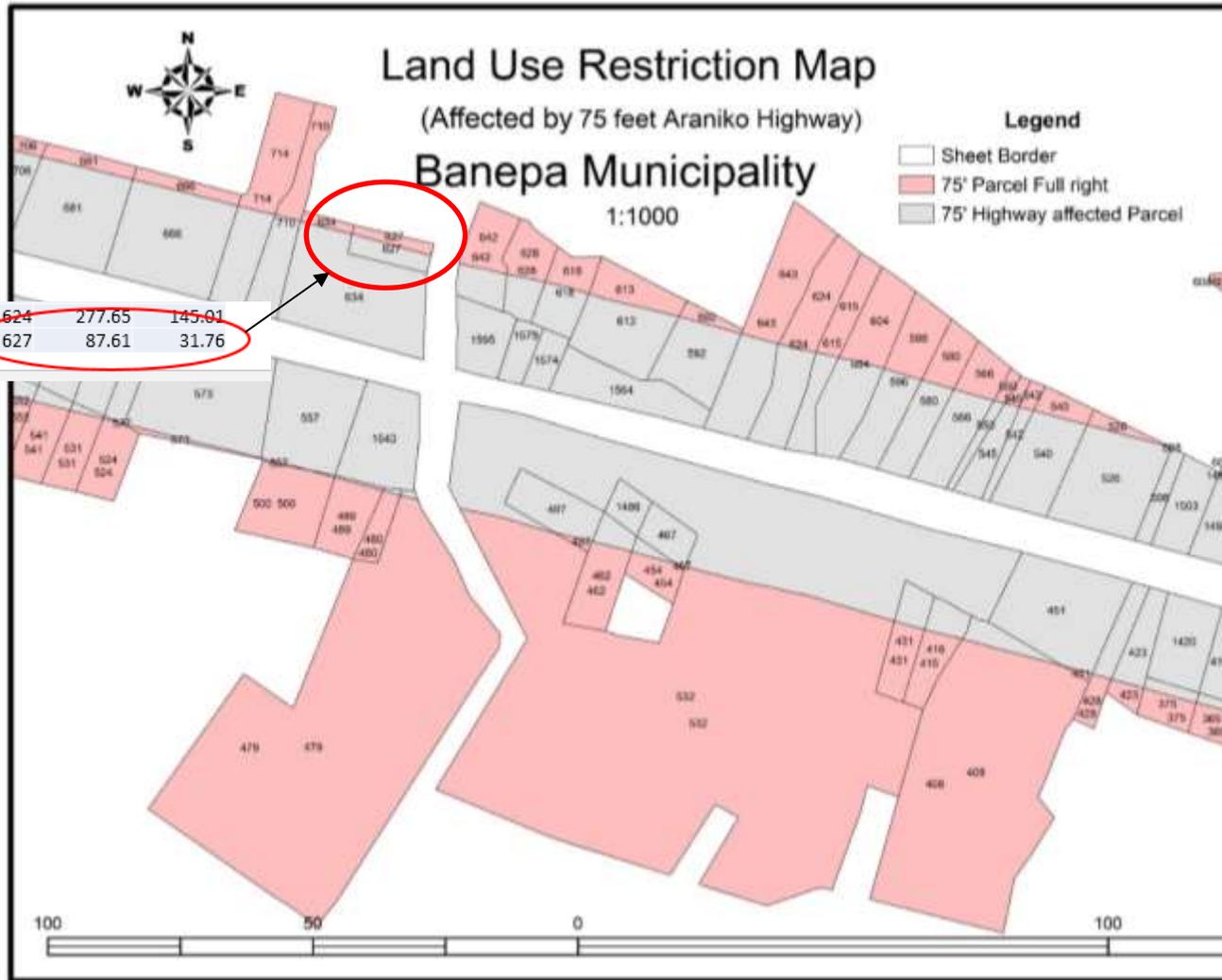




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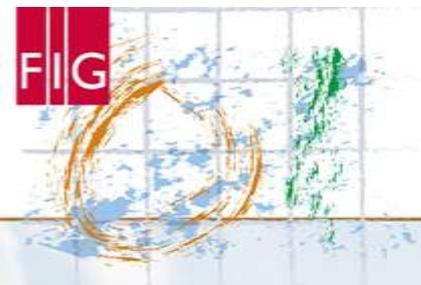


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From digitalisation to augmented reality

Findings: Reality vs Documents

- Actual Land to Land Certificate
- Assigned RRR to Real RRR
- Owner have full right on parcel in authorized official certificate and map/ documents.
- But actually the certificate and parcel map may differ or wrong with actual situation in case of RRR.
- The provision offered by land certificate of these areas surely variation in area and value.



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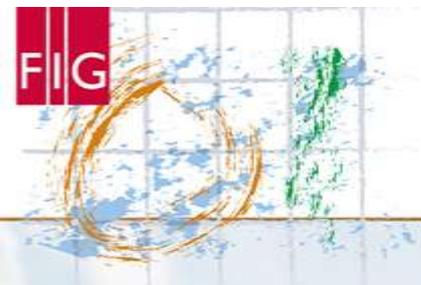


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Findings:

Unclear RRR is creating,

- land disputes, controversy and confusion, which directly affects in land value, land use, land ownership, land taxation and even in land development process.
- That variation on certificate and ground situation is badly governing to right, restriction and responsibility issues.



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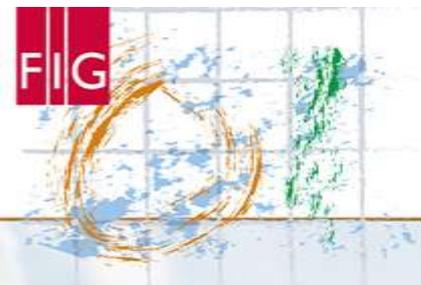


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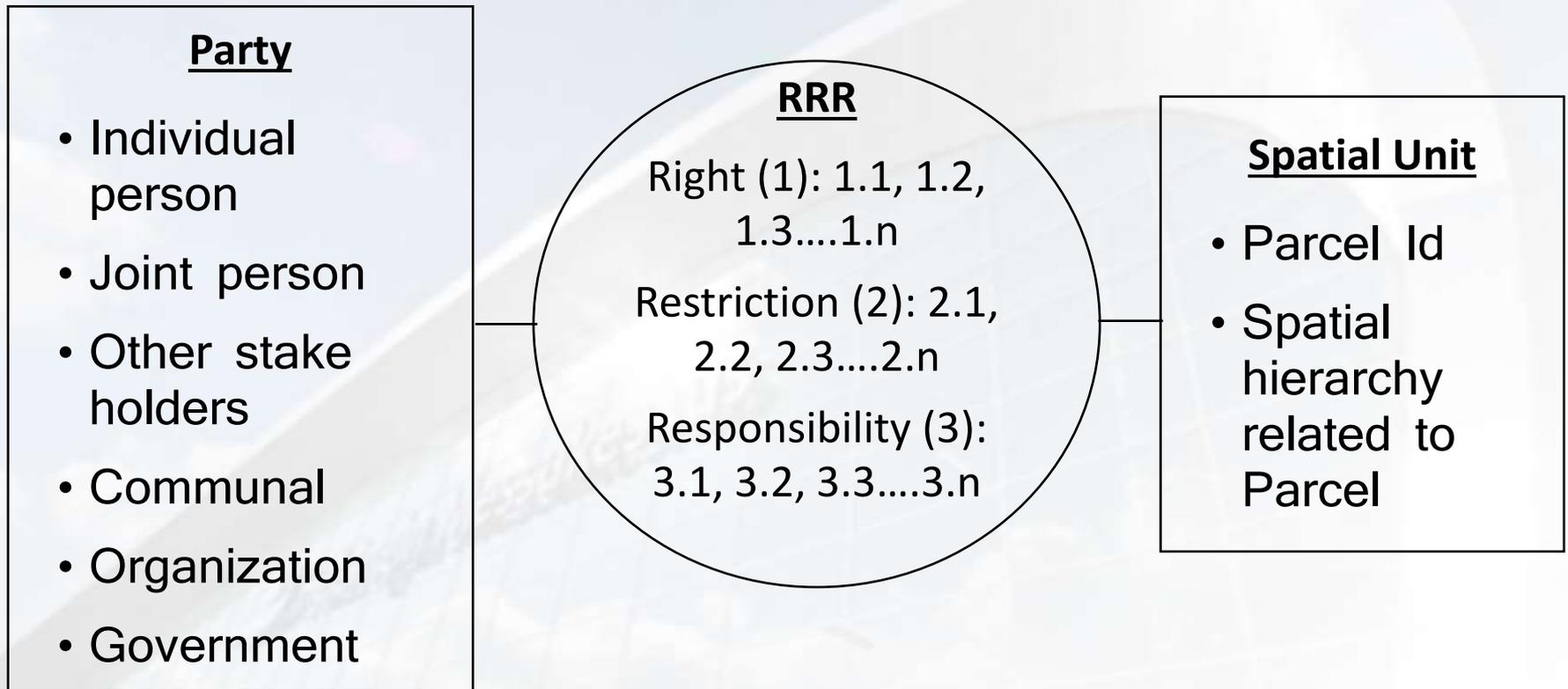
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Discussion:

Party-RRR- Spatial Unit: Linkage based on LADM



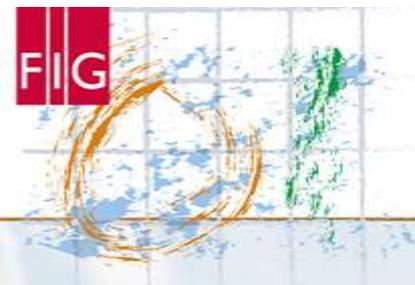


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Discussion: Party-RRR- Spatial Unit

Party	RRR			Spatial Unit
	Right	Restriction	Responsibilities	
<ul style="list-style-type: none"> • Individual person • Joint person • Other stake holders • Communal • Organization • Government 	R1.1 Occupy R1.2 Use R1.3 Sell R1.4 Transfer R1.5 Mortgage R1.6 Compensation R1.7 Easement R1.8 Derive income R1.9 Purchase R1.10 Grant R1.11 Inherit R1.12 Develop R1.n.....	R2.1 Exclude R2.2 Land use type R2.3 ROW R2.4 Rule of NEA R2.5 Local act R2.6 Land use zone R2.7 Subdivision regulations R2.8 Minimum parcel size R2.n.....	R3.1 Environmental requisition R3.2 Pollution control R3.3 Disturbance R3.4 Structures for access R3.5 Construction R3.6 Setbacks R3.n.....	<ul style="list-style-type: none"> • Parcel ID • Area • Value • Use • Spatial hierarchy related to parcel

Land Certificate



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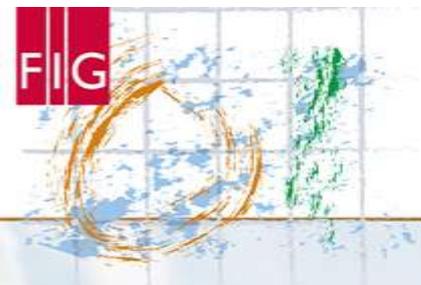


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Conclusion

- Clear identification and assigning RRR in land certificate through cadastral system will support to better relation with party to parcel /spatial object.
- Being cadastral system is the foundation of the land administration system, the clear identification, allocation and assignation of RRR can reduce conflict and rise positive aspect.
- It will be the base for sustainable land administration system of country.



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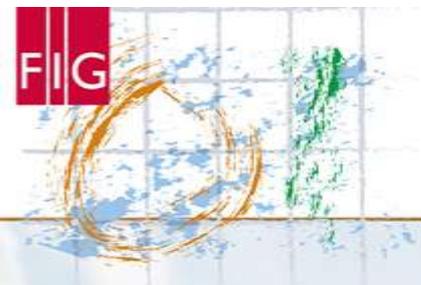


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Thank You for attention.

- Please for your suggestions, comments and questions.



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