

GIS for Investment in Health

Princeton Seminar

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Yoichi Yamagata
Japan International Cooperation Agency
(JICA)

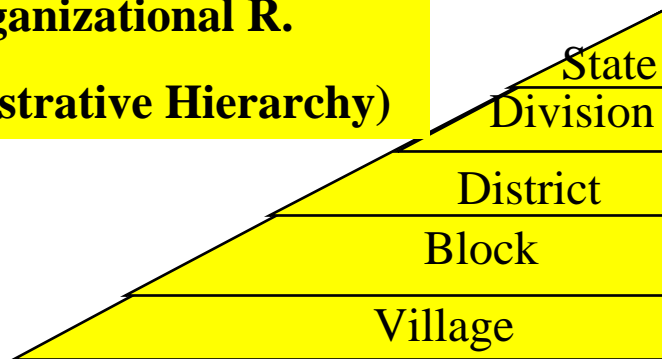
A dynamic view of Health Sector

- From Heterogeneity to Equity
 - Unequal service delivery
 - Heterogeneous distribution of diseases
- Everybody's business
 - Health for All; All for Health
- Circulation
 - Artery=service
 - Vein=information

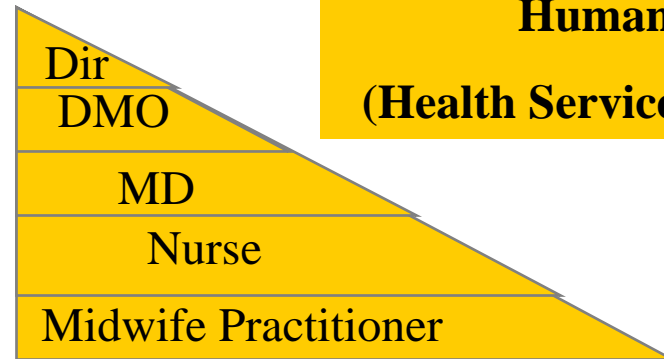
Resources for Health in India

Political Will,
Policy and Strategies

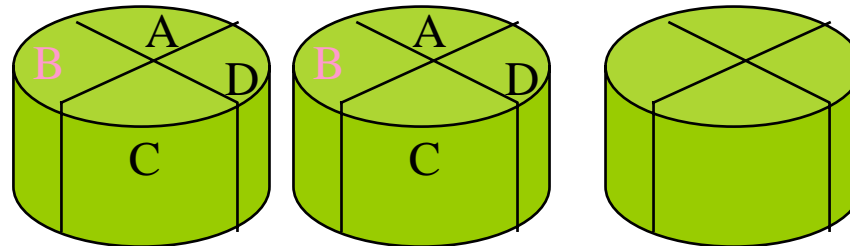
Organizational R.
(Administrative Hierarchy)



Human R.
(Health Service Provider)



Physical R.
(Health Facility
& Equipment)



Human R.
(Community)

Problems of Health

Policy and Strategies:

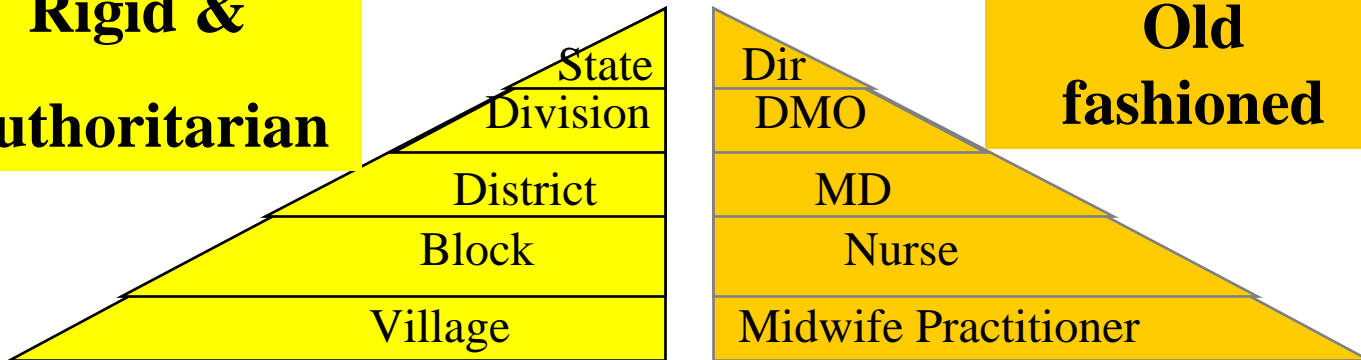
Unrealistic

Organization:

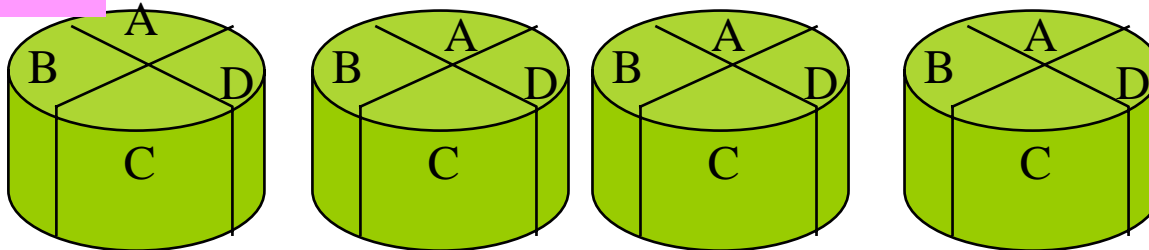
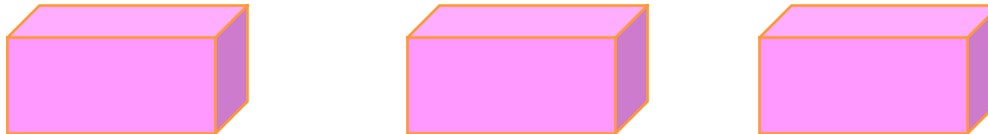
**Rigid &
Authoritarian**

Skills:

**Old
fashioned**

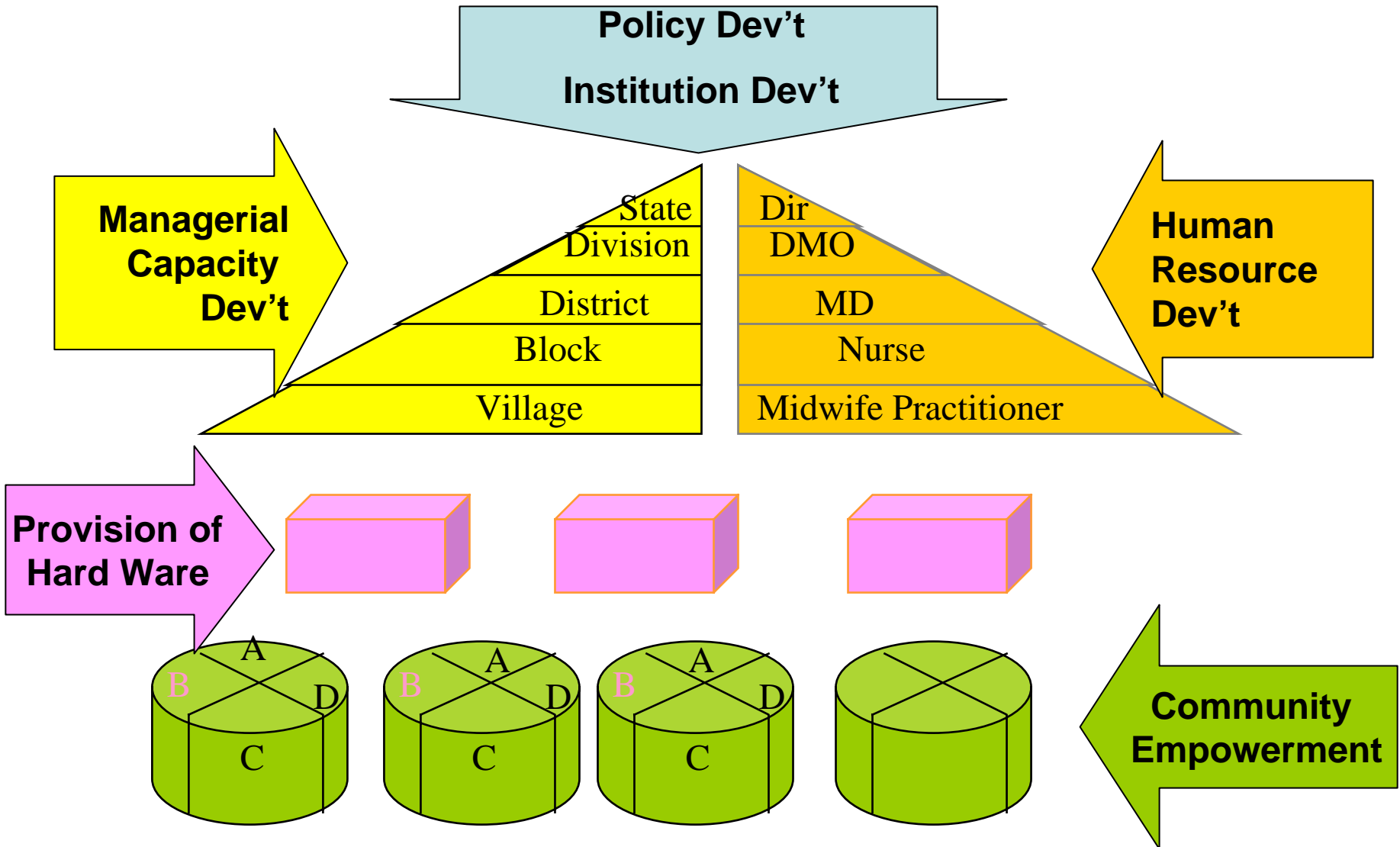


**Facilities:
Scarce &
Poor**



**Community:
Divided**

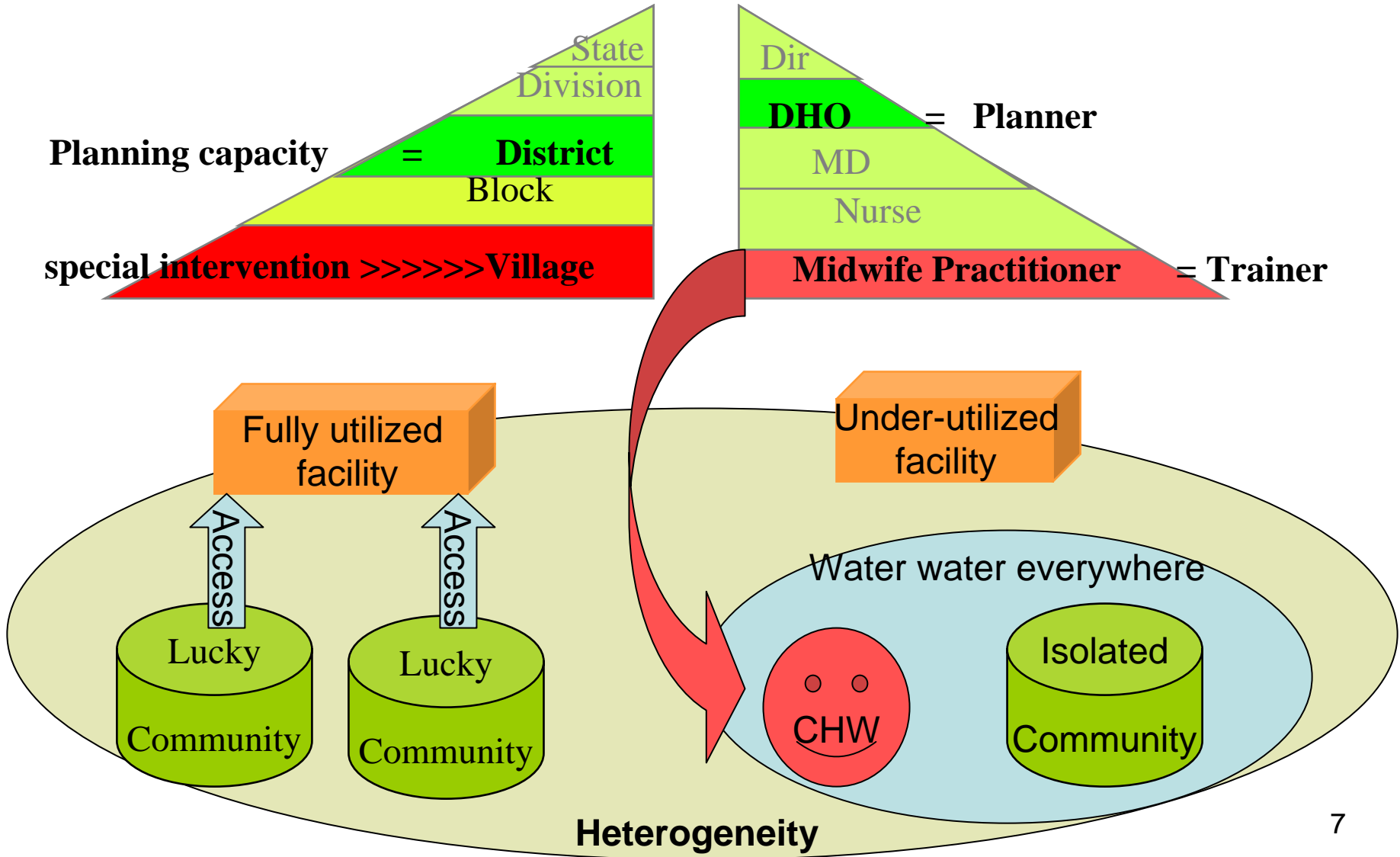
Possible Intervention from Japan



Inequity in service delivery

- Fill the gap and get equity
 - Unequal service delivery
 - Heterogeneous distribution of diseases
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Seasonal Accessibility to Facilities

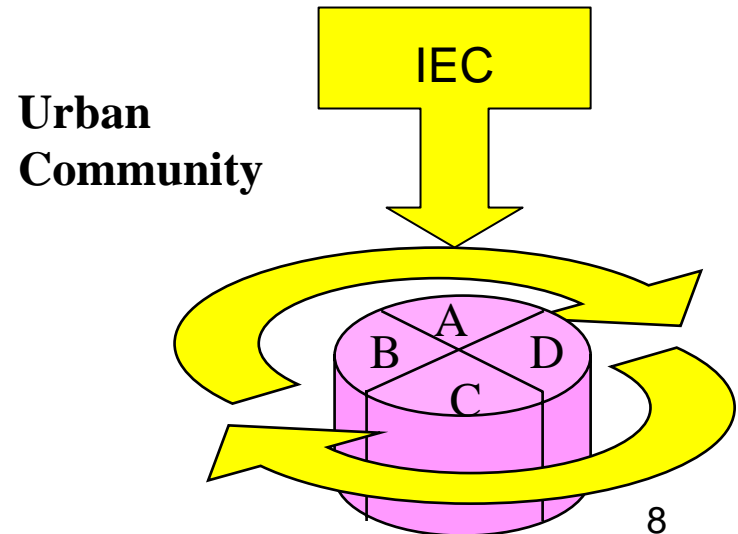
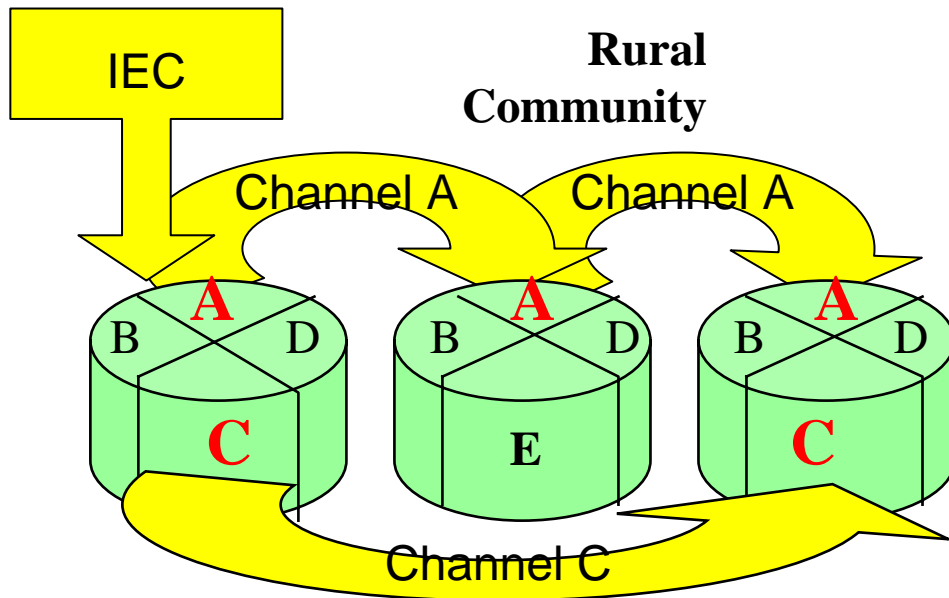
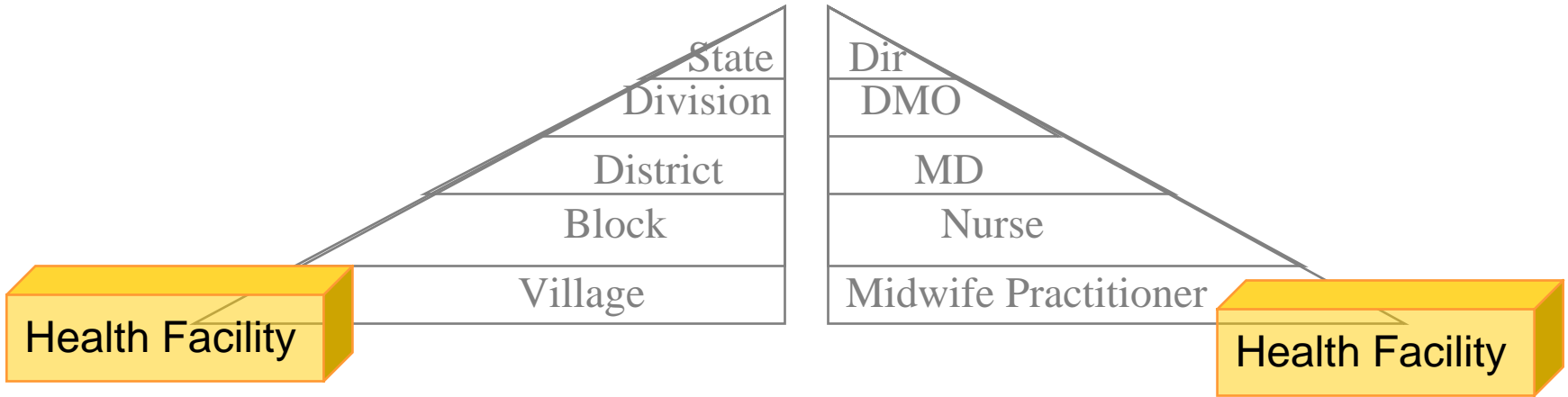


Heterogeneity within Community

Ethnic Channel of Information

Administrative Hierarchy

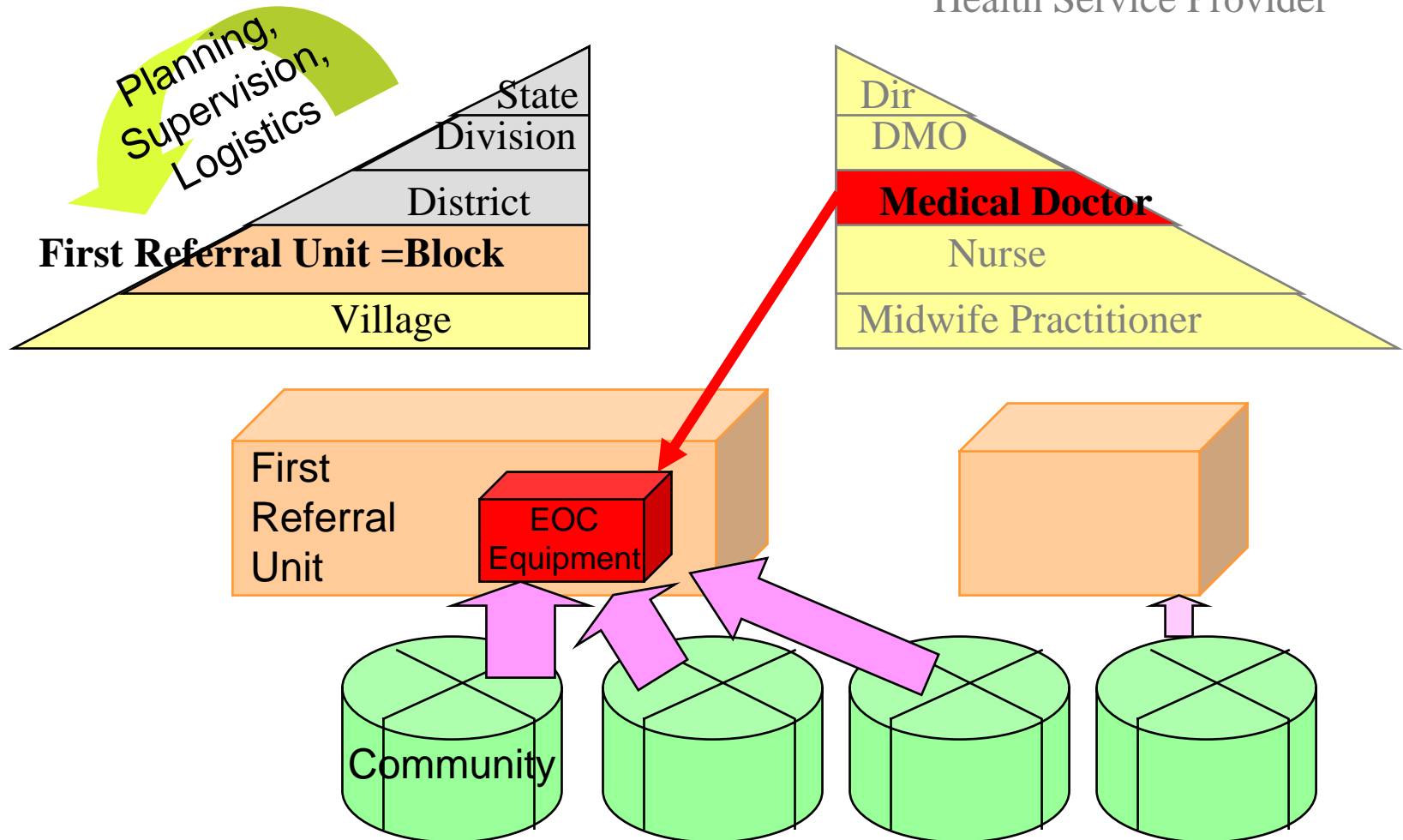
Health Service Provider



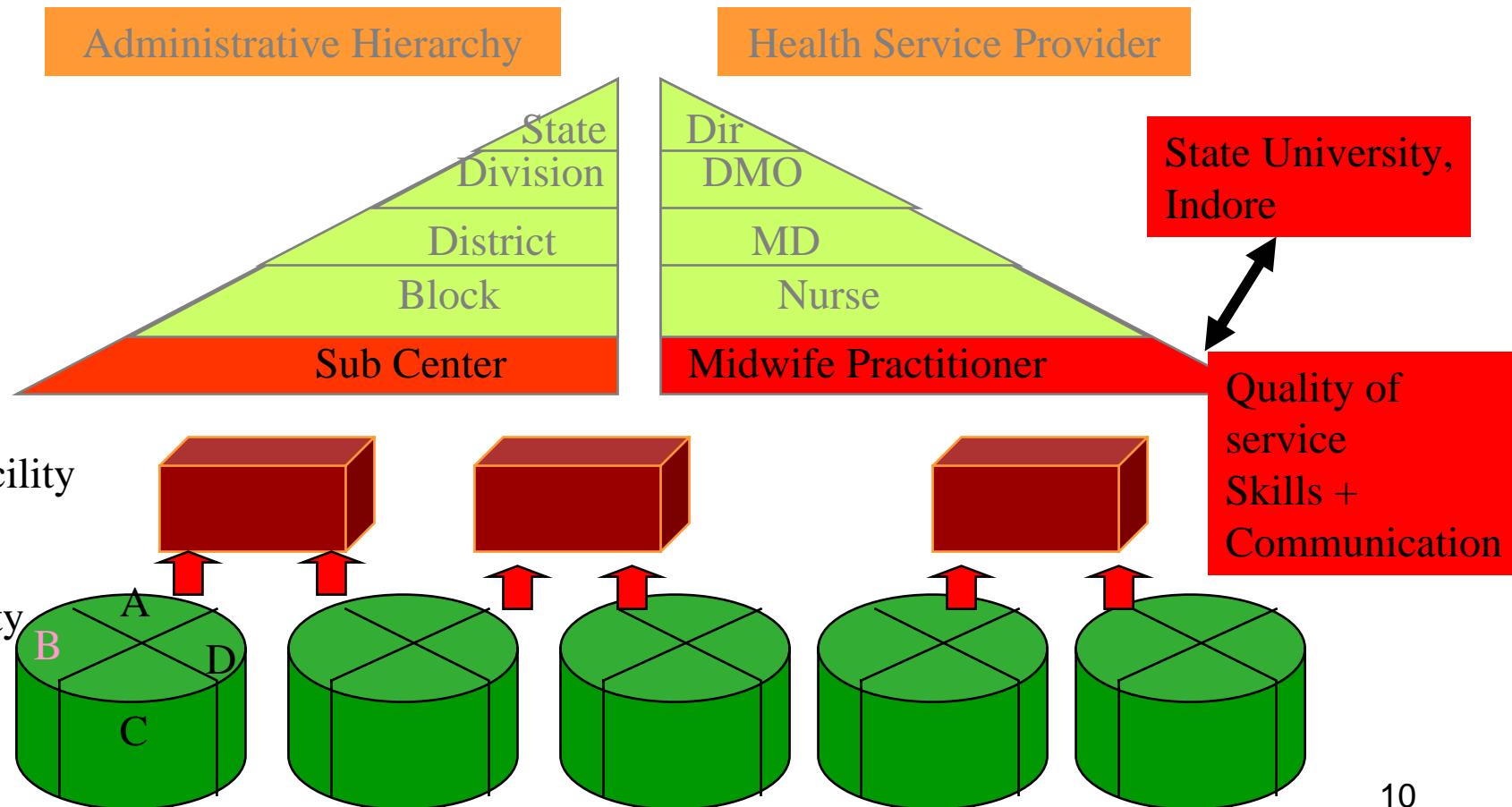
Provision of **Equipment** for Emergency Obstetric Care

Administrativ Hierarchy

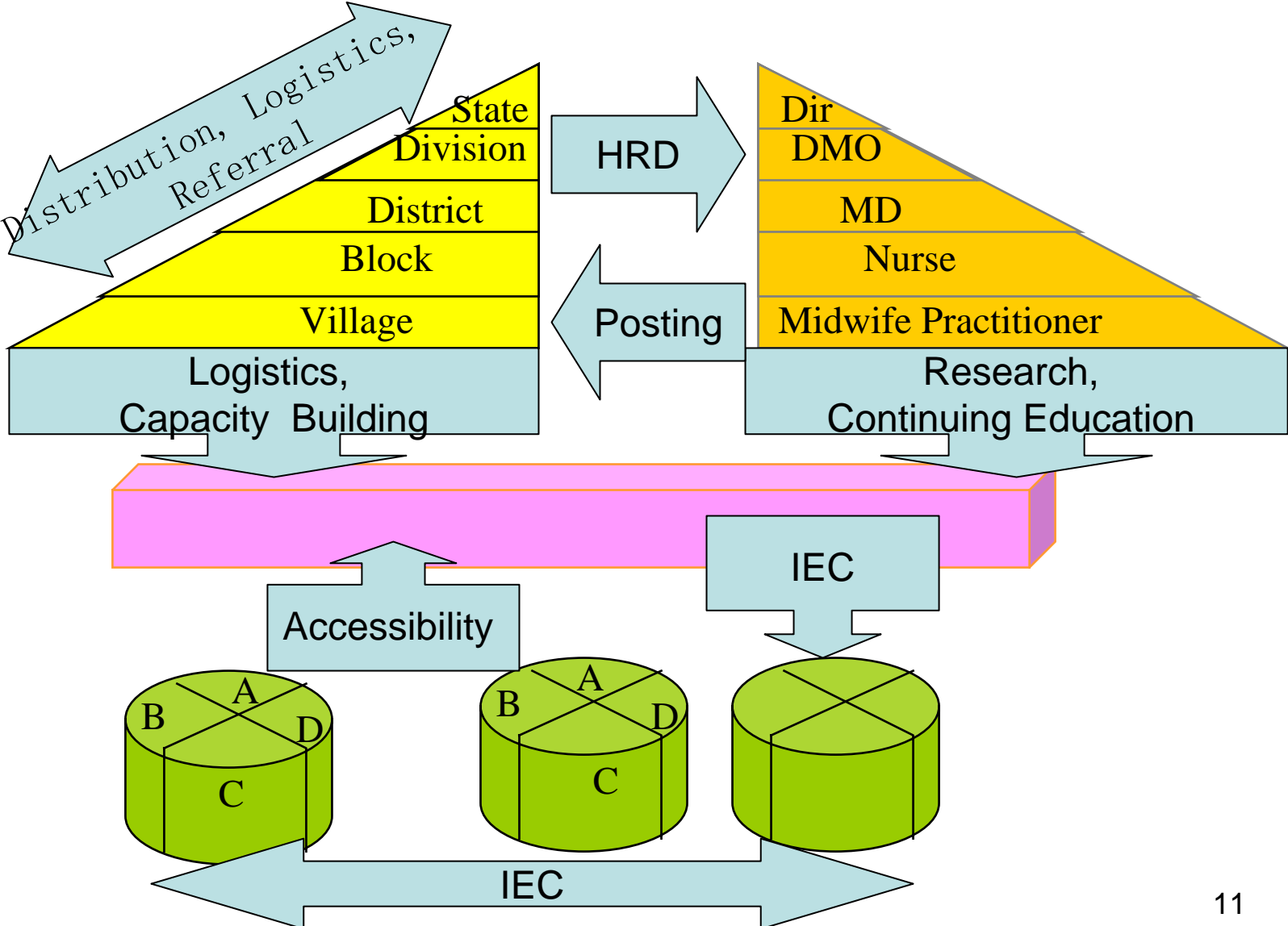
Health Service Provider



Midwifery education (In-Country Training Course)



Geographical factors in Health

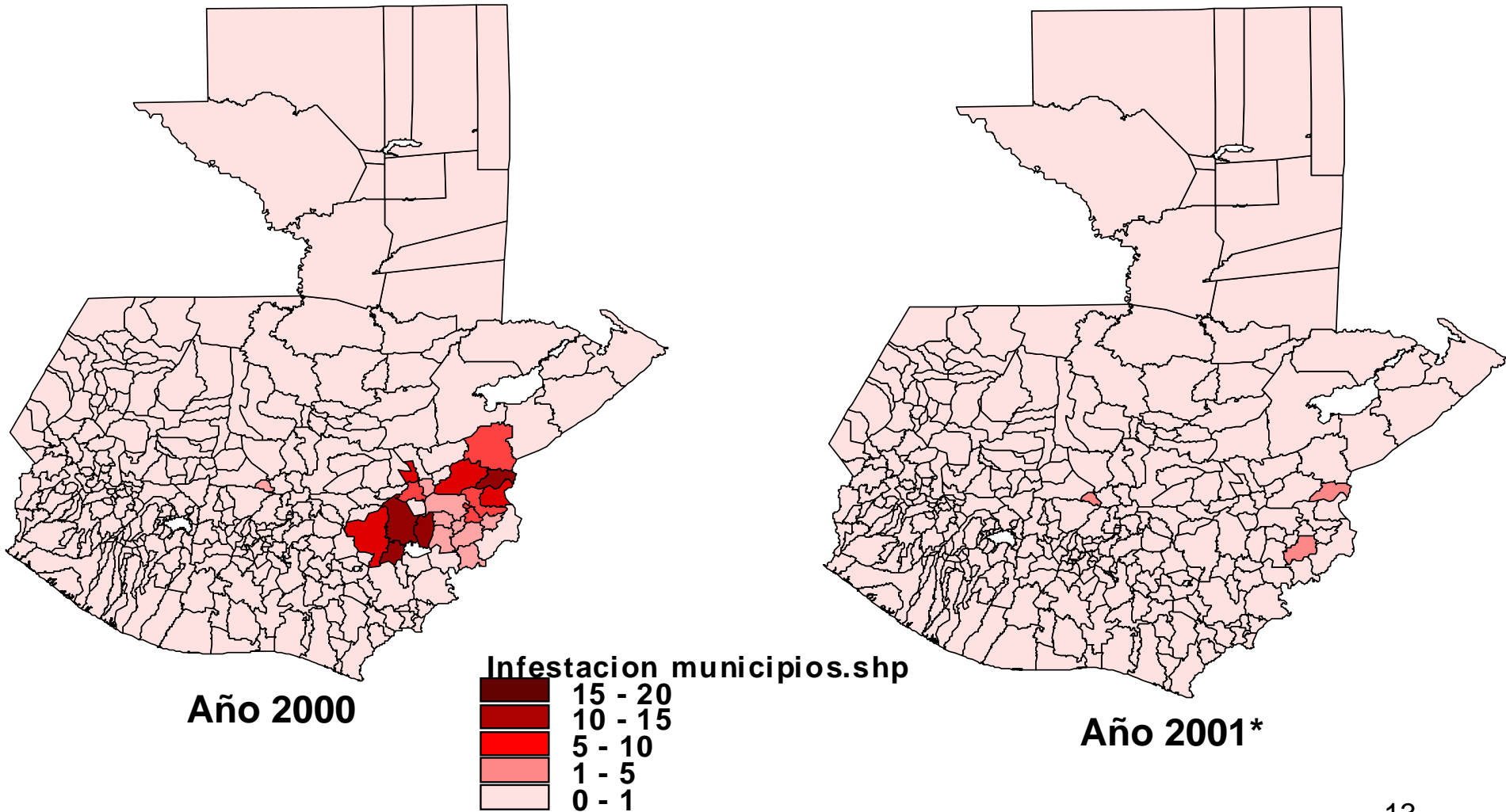


Endemic disease control

- From Heterogeneity to Equity
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Political Demonstration Tool

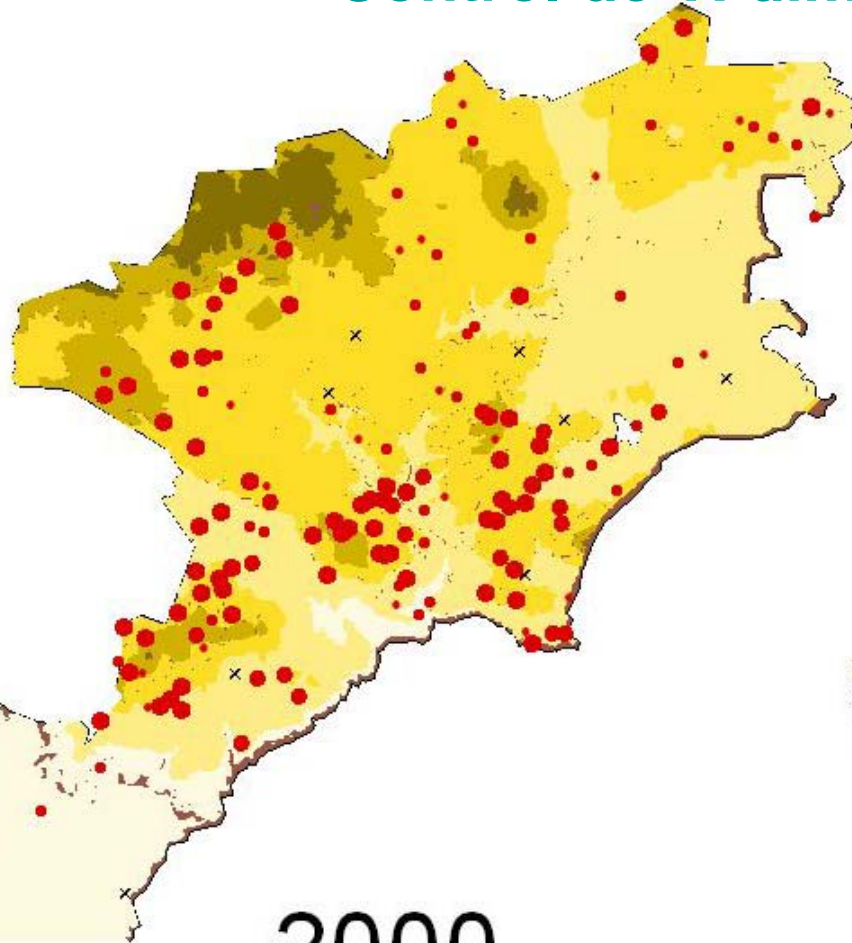
Municipalities infested by *R. prolix* bugs:
before and after the campaign



*Indice de infestación de las áreas rociadas

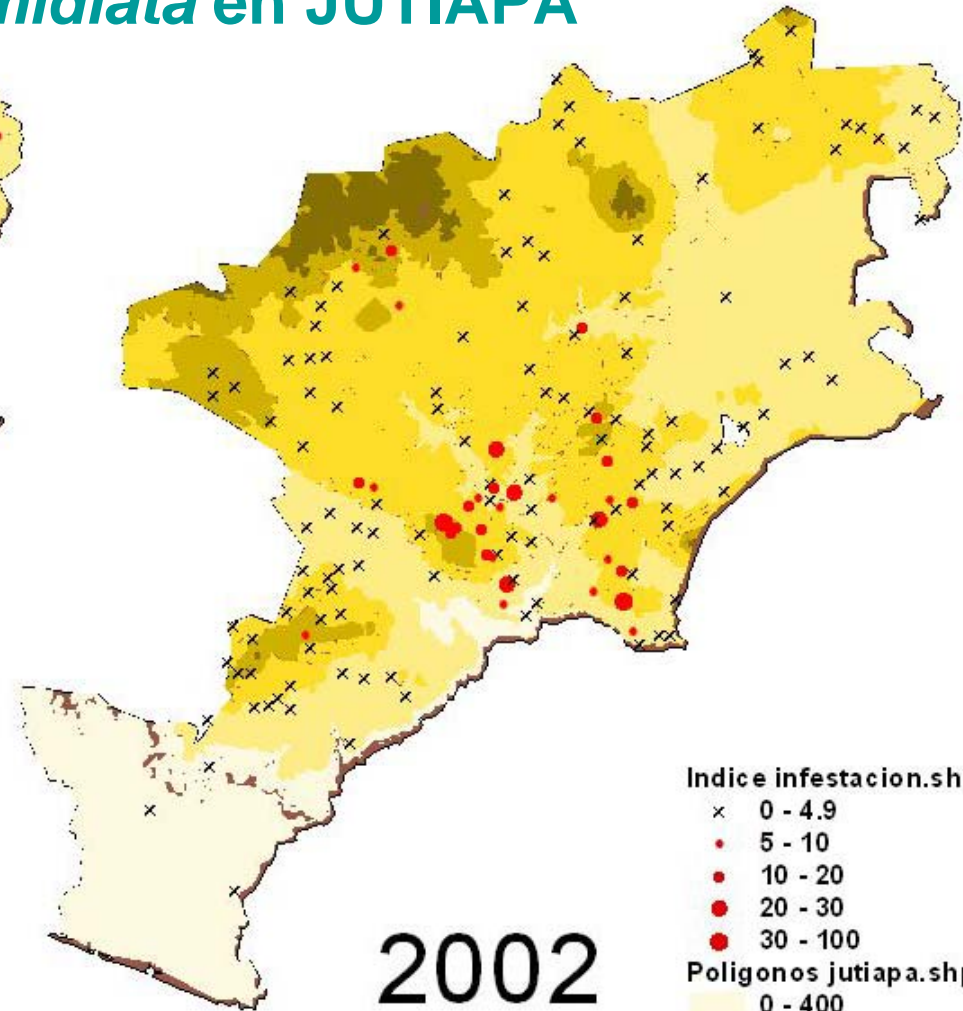
GIS is powerful for high resolution

Control de *T. dimidiata* en JUTIAPA



2000

Pre-rociamiento



2002

Post-rociamiento

Indice infestacion.shp

- × 0 - 4.9
- 5 - 10
- 10 - 20
- 20 - 30
- 30 - 100

Poligonos jutiapa.shp

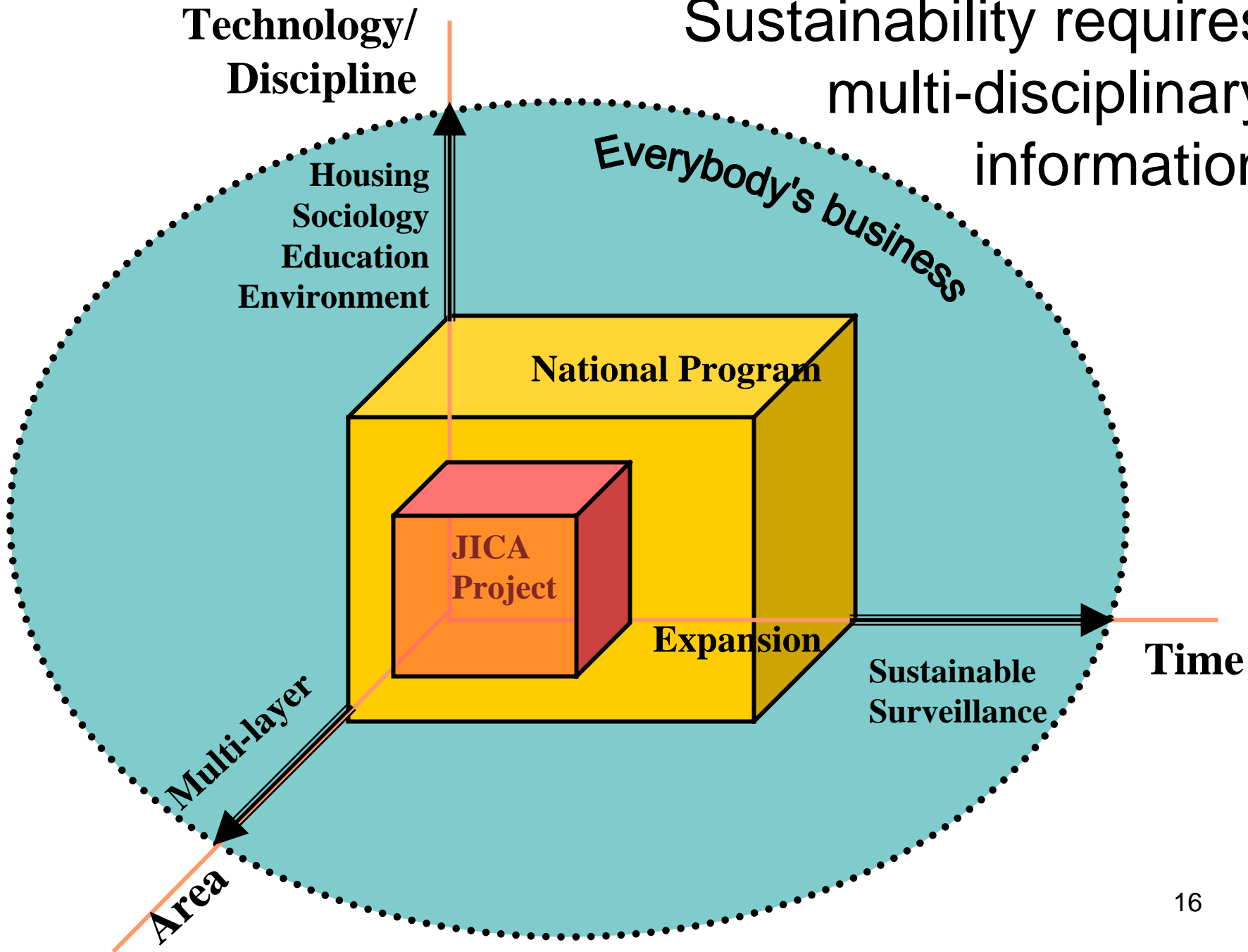
- 0 - 400
- 400 - 800
- 800 - 1200
- 1200 - 1600
- 1600 - 2000

Mapa jutiapa.shp

Beyond the Health Sector

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Sustainability requires
multi-disciplinary
information



Zooming

- *S. ochraceum* breeds in “young” streams
- Low stream “order” (macro=1:50000)
 - Objective
- Slope x Discharge (meso)
- Depth x Velocity (micro)
- Biology vs. Operation

Geology may affect Health

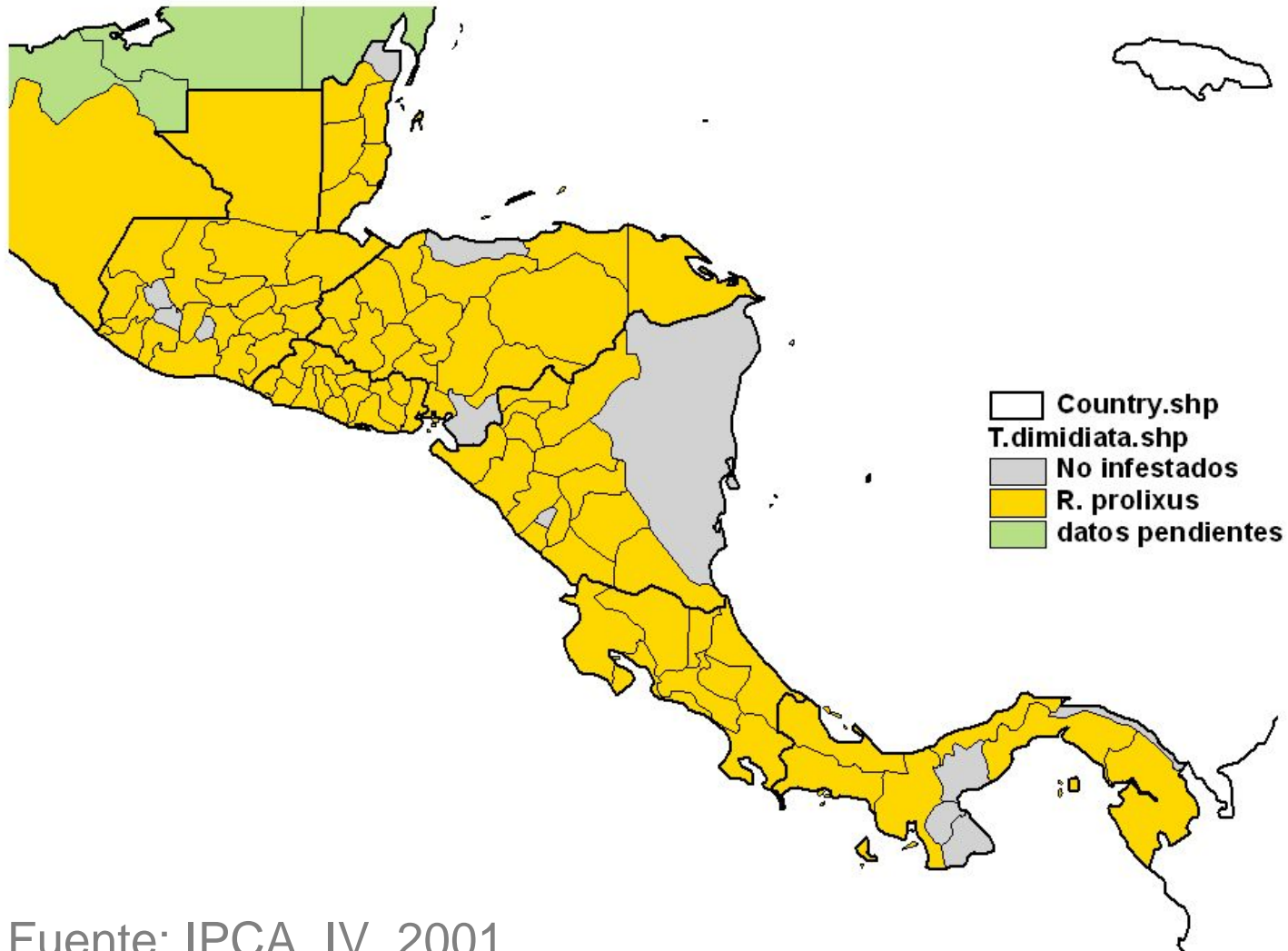
Onchocerciasis in Guatemala

Logical sequence

- Geology (type of rocks)
- Permeability
- Existence of running water
- Larval sites of black flies
- Blood feeding black flies
- Transmission of Onchocerciasis

Change may not be obvious

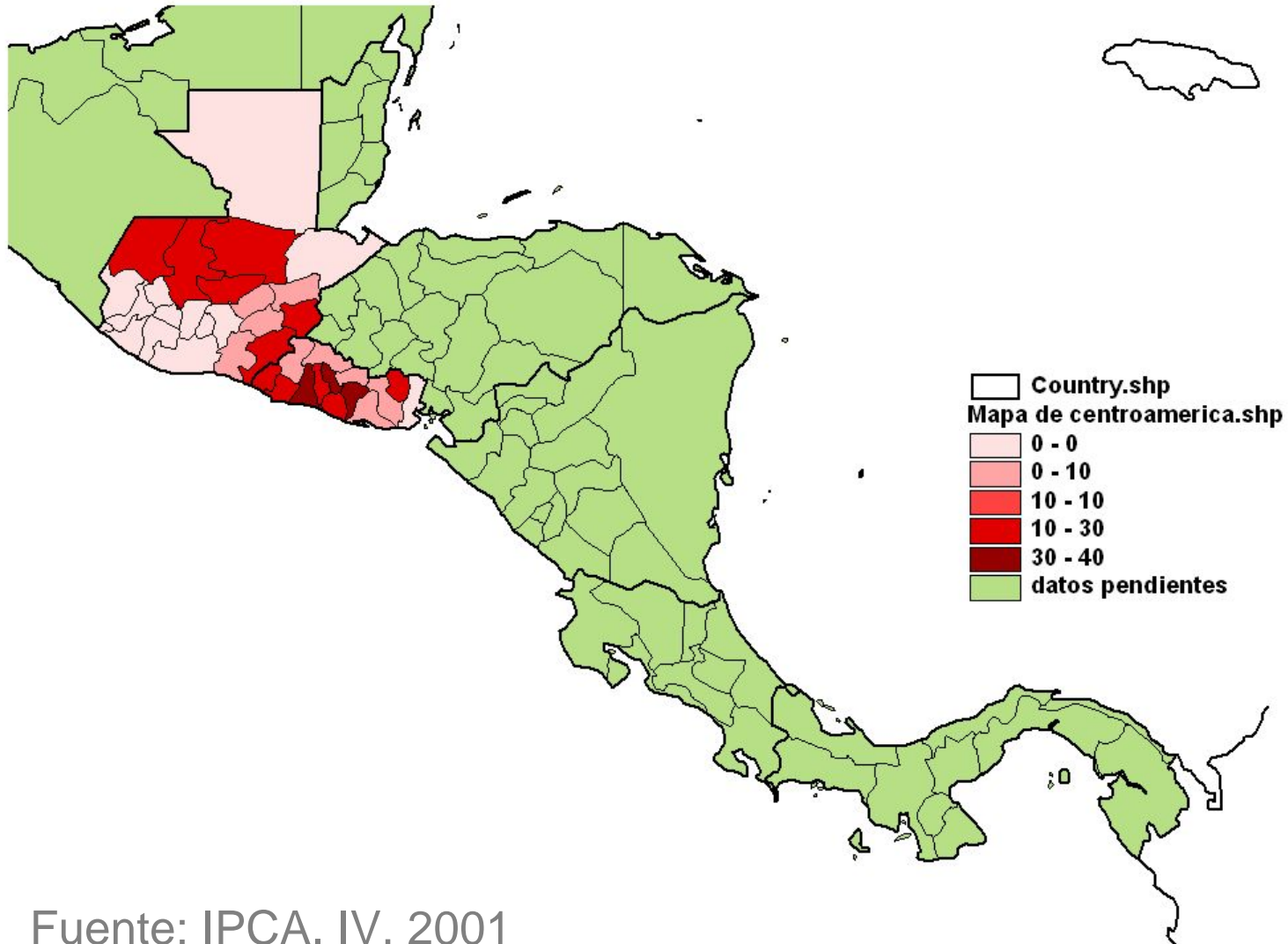
Distribución de *T. dimidiata* en Centroamérica por Departamento: Año 2001



Fuente: IPCA. IV, 2001

Quantitative representation

Index of House infestation with *T. dimidiata* 2000



Fuente: IPCA. IV, 2001

Stratified control of *Triatoma dimidiata*

Infestacion domiciliar

