



HUSO 2020 (Porto), 18th – 22th October, 2020

Smart Territories: Advocating for Smart Basic Entity (SBE) and the digital clone approach

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President of SUFFREN INTERNATIONAL

MAIN AREAS OF RESEARCH: Competitive Intelligence – Strategic Intelligence- Prospective (Foresight)

TOPICS:

Geopolitics – Hard and soft powers

Regional Issues- Asia- South-East Asia - Indonesia

The State as Strategist

Regional Development – Islands and archipelagos development

Smart Cities – Smart Territories

Member of CODATA France

Member of IEWG- Island Economy Working Group

Member of OTIE- Observatory of Tourism for Island Economy

Member of KITLV - Royal Netherlands Institute of Southeast Asian and Caribbean studies

Member of Futuribles

Member of the Millenium Project





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QUESTIONING ?

- Could « Smart approach » apply also to territories or villages and not only to cities
- Which areas of life should be concerned then ?
- Which information related to said areas could be useful ?
- Is it just a matter of using technology or a complete rethinking of territory' s organization
- What would be the good sizing ? The appropriate frame ? Village or others ?
- Would a digital clone approach be useful to resolve the equation ?



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PROJECTICS 2018 (Bidart –France)

- **Thinking Smart...Thinking Small: Smart Cities vs Smart Territories**

Pierre Fournié – Pr Christian Bourret

CODATA 2019 (Marne La Vallée –France)

- **The Smart Villages in the European Context**

Pierre Fournié – (Emeritus professor) Henri Dou

CODATA INTERNATIONAL 2020 (Beijing- China)

- **Excellence model and digitalization of economy: Case of SMART cities and tourism**

(Emeritus professor) Jean-Pierre Caliste

CODATA INTERNATIONAL 2019 (Beijing- China)

- **Data for Smart village and slow tourism in France and Western Europe**

Pierre Fournié – Pr Christian Bourret – Nathalie Fabry

SILKOLOGIES INITIATIVE 2019-2022 (Paris- France)

- **Smart territories, Smart cities, Smart villages from China to Africa**

Pierre Fournié - (Emeritus professor) Jean-Pierre Caliste



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Studies, works and projects conducted in Angola - China - France - Indonesia



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PROJECTICS 2018 (Bidart –France) Thinking Smart...Thinking Small: Smart Cities vs Smart Territories

“The modification of the family nucleus, the rates of suicides of farmers, the concentration and disappearance of small holdings across years, the desertification of rural provinces and the abandonment of villages, the closure of public services on small-medium cities shall question the model that has been implemented over years of an ever increasing concentration of population on cities, whether smart or not. Technology could be a fantastic chance to invert such an ineluctable destiny.

CONCLUSION

Whatever we call it “Smart Village” or “Smart Basic Entity” (SBE), we advocate that a new frame of organization and development shall be studied. It may become a potential area of growth and allow the inversion of the concentration process into cities.

The SBE model shall, of course and provided customization, benefit of the technical innovations and successful realizations that would be implemented in Smart Cities.

SBE and SC models shall not be competing with each other, but live side by side, completing each other through exchanges on data, technologies and experiences through existing or to be developed networks”



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CODATA 2019 (Marne La Vallée –France) The Smart Villages in the European Context

In some cases, it is a good idea to carry out a retrospective analysis of the prospection. This happened in the case of the unacceptable scenario developed by DATAR in 1970. Figure 2.5 shows explicitly that the unacceptable nonetheless (partially?) happened. So, what about public policies for regional development?

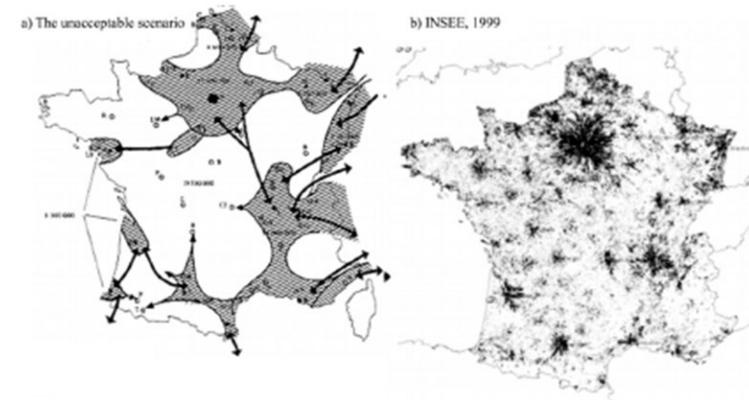


Figure 2.5. The unacceptable scenario (left), the French population in 2009 (right)

CONCLUSION

THE UNACCEPTABLE SCENARIO (DATAR 1970)



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CODATA INTERNATIONAL 2019 (Beijing- China) Data for Smart village and slow tourism in France and Western Europe

WHATEVER WE CALL IT:

SMART VILLAGE - SMART BASIC ENTITY (SBE) - SMART TERRITORY BASIC UNIT (STBU) OR SMART TERRITORY UNIT (STU)

It relates to SMART

Infrastructure Transportation Environment Services Governance People Living Economy

CONCLUSION

And requires

- MORE FLEXIBILITY ON THE PRODUCTION AND USE OF DECENTRALIZED, SUSTAINABLE, RENEWABLE ENERGY AND OTHER UTILITIES
- A NEW DEFINITION OF WORK, OF THE WORKPLACE, OF THE WORKING RELATIONSHIPS
- A HIGHER CONSCIOUSNESS ON ENVIRONMENT LIMITS AND NECESSARY PROTECTION
- A COMPLETE TRANSFORMATION AND RETHINKING OF COMMON SERVICES INCLUDING ADMINISTRATION, EDUCATION, HEALTH WITHOUT LETTING APART TRANSPORT AND FINANCIAL SERVICES
- TECHNOLOGY TRANSFER AND DISSEMINATION OF KNOW HOW
- BETTER SECURITY
- FAVOR R&D AND INDUSTRIAL DEVELOPMENT IN MANY FIELDS INCLUDING AGRICULTURE



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CONCLUSION

- A HUMAN BASED INTELLIGENCE
- A HUMAN ORIENTED INTELLIGENCE
- AN INTELLIGENCE OF THE SITUATION

CONCLUSION

A TREMENDOUS NEED FOR INTELLIGENCE

TECHNOLOGY IS TO BE USED TO SOLVE PROBLEMS NOT (ONLY) TO CREATE PROBLEMS

TECHNOLOGY IS TO BE USED TO EMPOWER PEOPLE NOT (ONLY) TO CONTROL PEOPLE



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CONCLUSION
A TREMENDOUS NEED FOR INTELLIGENCE

CONCLUSION

**THE SBE (Smart Basic Entity) or SMART VILLAGE IN ASIA AND AFRICA
AN OPPORTUNITY TO DEVELOP**

- **DAILY LIFE SOLUTIONS FOR WATER/ ENERGY/ TRANSPORT/ HEALTH/EDUCATION/ SECURITY...**
 - EASY TO IMPLEMENT
 - COST EFFECTIVE
 - EFFICIENT
 - SUSTAINABLE
 - ACCEPTED BY THE POPULATION
 - SUPPORTED BY THE POPULATION



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CONCLUSION
A TREMENDOUS NEED FOR INTELLIGENCE

CONCLUSION

**THE SBE (Smart Basic Entity) or SMART VILLAGE IN THE WORLD
AN OPPORTUNITY TO DEVELOP**

- **CREATE AN OBSERVATORY OF THE SBE OR SMART VILLAGE**
- **IMPLEMENT IN SELECTED AREAS**

« Pour réussir dans le monde, retenez bien ces trois maximes:
Voir c'est savoir
Vouloir c'est Pouvoir
Oser c'est Avoir » (Musset)



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On September 23rd, 2020
For UNESCO and NETEXPLO

SMART CITIES BECOME LINKING CITIES!

The Smart City is too limited a concept for the future: "smart" suggests technology over people. Cities should connect with their environment, their citizens and their region.



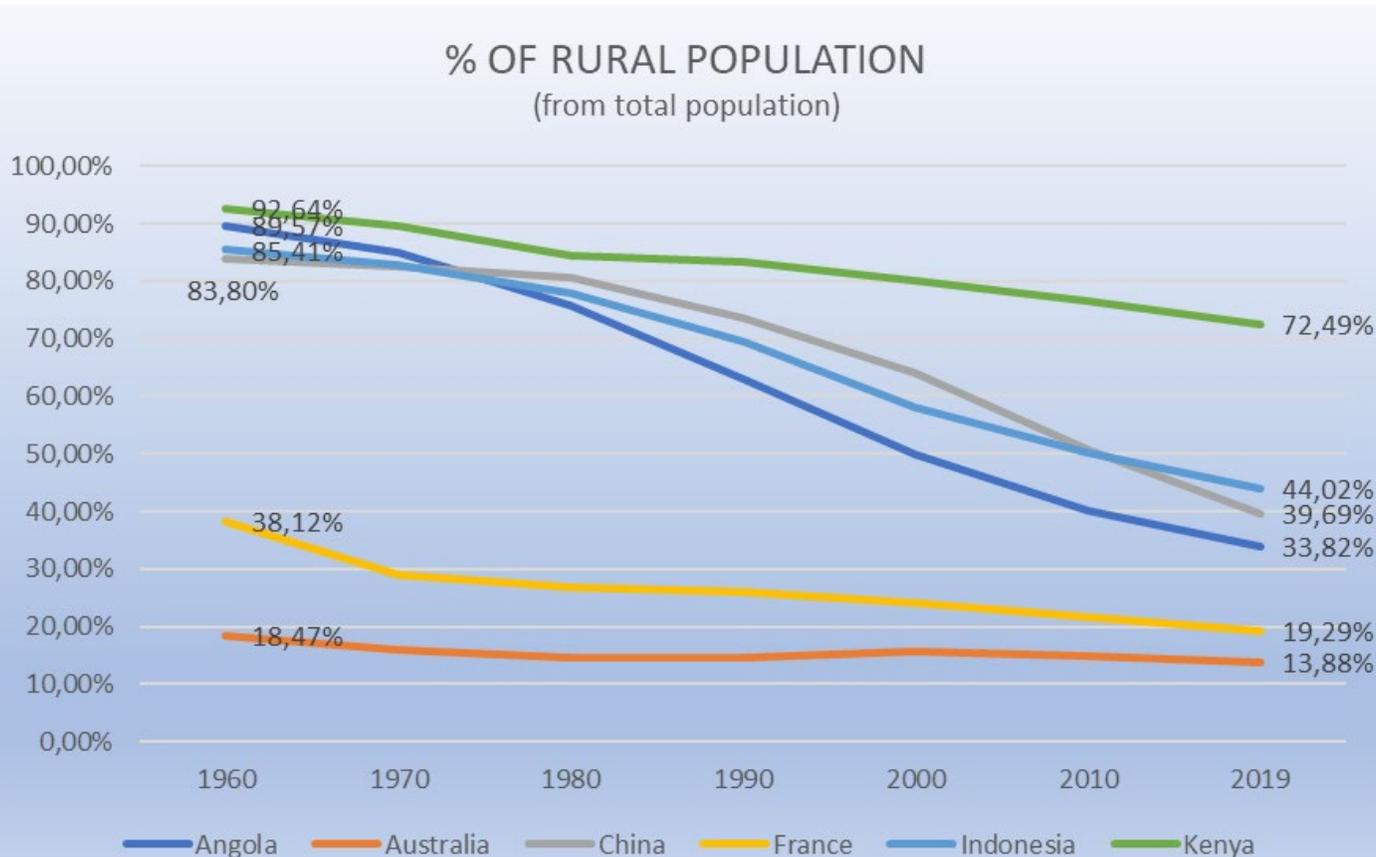
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In such a case what about the remaining 35% of the humanity ?



In fact more:

1960: 66,40%



2018: 44,70%

Source: World Bank 2020



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 **utc**



In such a case what about the remaining 35% of the humanity ?

From Beijing to Luanda and Foixsome considerations...the 3F

- A « Territorial Fracture »
- A « Technological Fracture »
- A « Data Consciousness Fracture »

Accross France

The Territorial Fracture

... and the Yellow Vest Movement (Gilets Jaunes)

All over the world can be amplified by SARS-COV2



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No worldwide and commonly accepted definition of a city

The study of cities is not of interest to the statistician alone. The phenomena of the city, because of the various social consequences flowing from them, are of primary importance to the sociologist. It is astonishing then that a scientific definition of it has scarcely been attempted as yet. (Maunier 1910)



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A problem of definition

- Denmark: 200 people*
- Kenya: 2000 people*
- Benin: 20000 people*
- Japan: 50 000 people*
- In France: the distance between buildings <200 m and > 5 000 inhab
< 2000 : Village 2000<Bourg < 5000 >5000 city

*UN Habitat report : « Qu'est ce qu'une ville » - 2016



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In such a case what about the remaining 35% of the humanity ?

At the era of URBANOCENE we still do not know how to define a city

City, Urban area, Urban agglomeration, Metropolitan zone, Rural area, Intersticiel...

Mono criteria definition: ex population number...

Multi criterias definition: ex population number, density, administrative definition, economic activity

In Bhutan: 4 conditions on 5 criterias:

- a) Minimal population (1500 inh)
- b) Density (> 1000hab per sq/km)
- c) Economic activities (50% shall not be related to primary sector)
- d) Spatial size (>1,5 km²)
- e) potential increase on revenues

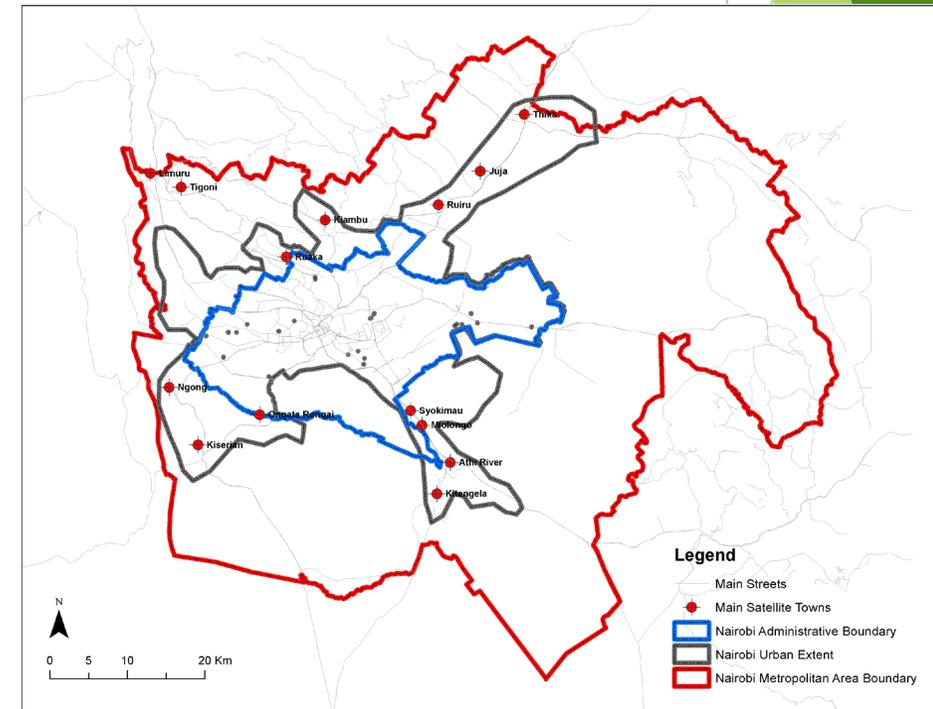


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In such a case what about the remaining 35% of the humanity ?
At the era of **URBANOCENE** we still do not know how to define a city

➤ Several concepts produce different frontiers*
(The Nairobi example)



*UN Habitat report : « Qu'est ce qu'une ville » - 2016



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At the era of **URBANOCENE** we still do not know how to define a city

➤ Several tentatives to define the city

Defines

- Urban built-up areas → built density > 50%
- Suburban built-up areas → built density 25-50%
- Rural built-up areas → built density < 25%

- Peripheric open space
- Captive open space
- Rural open space

- High density/urban center -> cells of 1sq/km // 1500 hab/cell with a minimum of 50 000 inh
- Urban category → cells of 1sq/km // 300 hab/cell with a minimum of 5000 inh
- Rural category → cells that do not enter in the above categories

Allows to classify into High Density Cities // Medium density // Low density or rural

The New York University definition

Urbanized open space

The New Degurba method Degree of urbanization



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- A complex system defined by its MORPHOLOGY and FUNCTIONS (Maunier 1910)
- Static and economic theories: **Central place theory** (Walter Christaller 1933) (Veneris 1984)
- Dynamic theories: **Gibrat's law** (1931) **Zipf's law**
- Interdependance theories: **The general system of cities** (Reynaud 1841) **Cities as systems within systems of cities** (Berry 1964) Pred (1977)
- Auto-organization of cities: Pumain (1997, 1995)



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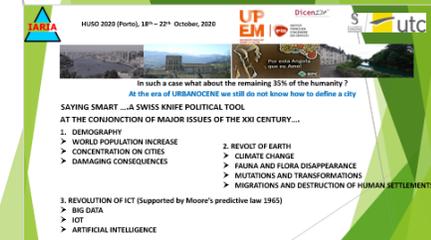
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At the era of URBANOCENE we still do not know how to define a city

With the internet and IoT technologies , by becoming SMART, the city becomes even more complex



It is rather impossible to define what is the city so we cannot define by deduction

What is a village

What is a rural area



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At the era of **URBANOCENE** we still do not know how to define a city

SAYING SMARTA SWISS KNIFE POLITICAL TOOL

AT THE CONJUNCTION OF MAJOR ISSUES OF THE XXI CENTURY....

1. DEMOGRAPHY

- **WORLD POPULATION INCREASE**
- **CONCENTRATION ON CITIES**
- **DAMAGING CONSEQUENCES**

2. REVOLT OF EARTH

- **CLIMATE CHANGE**
- **FAUNA AND FLORA DISAPPEARANCE**
- **MUTATIONS AND TRANSFORMATIONS**
- **MIGRATIONS AND DESTRUCTION OF HUMAN SETTLEMENTS**

3. REVOLUTION OF ICT (Supported by Moore's predictive law 1965)

- **BIG DATA**
- **IOT**
- **ARTIFICIAL INTELLIGENCE**



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EUROPEAN UNION

FRANCE



INDIA



CHINA



AFRICA



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EUROPEAN UNION

- The Cork Declaration (Ireland, 2016)
- The UE Action Plan for Smart Villages (11/04/2017) aims at « investing in the viability and vitality of rural areas »
- The Bled Declaration (Slovenia, 2018)

The Smart Villages initiative aims to create rural areas where people can and want to live, because innovative, digital solutions make their lives easy and comfortable. Business models and platforms from the circular economy and the sharing economy are great examples, which also could be delivered to rural areas.

*Franc Bogovic and Tibor Szanyi,
European Parliament*



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FRANCE

SMART VILLAGE NETWORK

<https://www.reseaurural.fr/centre-de-ressources/videotheque/smart-villages>

In connection with the **European Network of Rural Development (ENRD)**

Smart Villages aim to effectively combine different policies in order to identify more effective and smarter ways to promote integrated rural development. Smart Villages means harnessing existing and emerging technologies as well as social innovations to improve the lives of our citizens

Phil Hogan, European Commissioner for Agriculture and Rural Development, 22/05/2018

CEREMA (Centre d'Etudes et d'Expertise sur les Risques, l'Environnement, la Mobilité et l'Aménagement)

Public structure, under Ministère de la Transition Ecologique and Ministère de la cohésion des territoires et des relations avec les collectivités territoriales – Created 2014



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FRANCE

In the department of Nièvre - 1400 inh

Several « citizen based initiatives »





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INDIA

Government programs for Smart Villages
Panchayati raj system
Best Gram Panchayat in Gujarat

Used as model in Kenya

Punsari Gujarat village - Sabarkantha district-Gujarat
80 km from the state capital, Gandhinagar. • The village follows the Panchayati raj system. N
New and advanced technology in education
Wi-Fi connection for all people.

Empowerment of women
Increased security

Development of facilities :

- local mineral water supply
- sewer & drainage project
- healthcare centre
- banking facilities
- tollfree complaint reception service

Source:

http://www.slideshare.net/gauravhtandon1?utm_source=profile&utm_medium=ssemail&utm_campaign=download_notification



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INDIA

Saansad Adarsh Gram Yojna modified by Prime Minister Modi

(Parliamentarian's Model Village Scheme), under the new scheme, each parliamentarian is mandated to adopt three rural villages and ensure that these village are transformed in to "Smart Villages" by 2019.

Source:

http://www.slideshare.net/gauravhtandon1?utm_source=profile&utm_medium=ssemail&utm_campaign=download_notification



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CHINA

Pr Jean Pierre Caliste

Exploratory work was carried out in the city of Shanghai (China).

In partnership with the company Mobike (free bicycle), students worked on the development of an onboard pollution capture system (integrated into the bike frame).

The aim was to transmit this information to a platform to advise cyclists on "greener" alternative routes.



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AFRICA (ANGOLA)

Pr Jean Pierre Caliste

Under the umbrella of the DNDTI (National Direction for the Development of Technology and Innovation) of the MESCTI (Ministry for Higher Education, Sciences, Technology and Innovation).

How new technologies can be used for assuring a real, sustainable development of a small city (village)?

How could a global approach be defined and implemented?

The project aims to consider each field of challenge (energy, wastes, water ...) as a system and to consider the global interactions between all these systems. The objective is not only to solve problems; it is more the optimization of different solutions under a set of balanced criteria (economic development, alphabetisation rate, safety and security ...).



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AFRICA (ANGOLA)

The pilot project will consist of two parts (parallel)

- A focus on scientific and technological studies to propose and implement selected solutions (ex production and consumption of energy).
- B consists in developing a “digital ghost” (or digital clone) of the small city (village) based on the capture of data concerning all the aspects to take into account even the feelings and the opinions of the citizens, tourists....

EFQM model will be used for evaluating the efficiency of enterprises or public organizations



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OUR CONCERNS

DEFINE THE AIM AND PHILOSOPHY

ELABORATE A FIELD-BASED DEFINITION

LIST THE AREAS OF LIFE CONCERNED

IDENTIFY THE INFORMATION TO BE ACQUIRED, VALORIZED AND DISTRIBUTED

STRUCTURE THE DIGITAL GHOST

RUN THE DIGITAL GHOST



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WHERE WE ARE NOW

DEFINE THE AIM AND PHILOSOPHY

OUR AIM (SMART)

Systemic
Modeling
and
Avanced
Re-engineering
of
Territory

OUR PHILOSOPHY (HAWK)

Holistic
Accepted
Wise
K Creative
Secured



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WHERE WE ARE NOW

ELABORATE A FIELD-BASED DEFINITION OF THE SMART BASIC ENTITY

Our guess is that

- a) we shall not look at the parameters of the village of territory or village but at the needs of its governance and population
- b) we shall consider the territory or the village as a complex system permanently auto-organizing itself
- c) the SBE shall be an independent unit connected to a network of SBE and to Smart Cities through regional and national networks
- d) as a consequence both internal SBE data and dataflows exchanged with the outside shall be considered



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WHERE WE ARE NOW

LIST THE AREAS OF LIFE CONCERNED

TANGIBLE / HARD

Water

Energy

Land

Environmental Ressources (Forest, Mines, Parks, Rivers,...)

Buildings (including Health care and education)

Infrastructures

Security systems

INTANGIBLE/ SOFT

Governance

Education

Health

Economy

Culture

APPLICATIONS

Utilities management

Land and environment ressources management

Mobility

Buildings management

Economy

People (Cultural, social, education and health)



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CONCLUSION

NO INEVITABLE FUTURE FOR RURAL TERRITORIES

TECHNOLOGY MAY ABOLISH DISTANCE AND SUPPRESS THE DANGER OF SPECIALISATION

A WAY TO CREATE A NEW DYNAMISM AND DECONCENTRATE COUNTRIES

TECHNOLOGY MAY OFFER DECENTRALIZED PRODUCTION OF ENERGY, WATER TREATMENT, CREATION OF ADDED VALUE,...

A DEVIANT THINKING (FAR FROM THE DOMINANT ONE)

A WAY TO PEOPLE EMPOWERMENT

A SUSTAINABLE APPROACH

But that requires political will, audace and long-term vision



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CONCLUSION

A holistic way to fight against the 3F

- **The « Territorial Fracture »**
- **The « Technological Fracture »**
- **The « Data Consciousness Fracture »**