Expectations & issues to discuss with peers

…To receive feedbacks & external inputs on what done so far but also to discuss on the following main issues:

1.How much “thematic / sector focused” a strategy has to be in order to be potentially successful?

2.Understanding how we can better engage our business base with R&I & how can available research capacity be oriented towards “marketable” results

3.Discussing about best practices for the enhancement of business base by means of technological/ non technological innovation processes. Best suited instruments, actors, policies?

4.How to orientate innovation policies towards main societal challenges, such as unemployment, social inclusion … social innovation a suitable tool? other patterns?

A geographical contextualisation ...

"Less than a nation, Sicily is more than a region, it is not a fragment of Italy, but its integration and enhancement"

Giuseppe Antonio Borgese, sicilian poet

Brief socio-economic regional profile

- **Population**: aprox. 5M inhab., extension 25.706 km², pop. density: 194 inhab./Km² (4th biggest region in ITA in terms of pop.)
- **GDP per capita**: 71% of the EU27 average; Unemployment rate: 14.4% (2011) (8.4% ITA) - Youth unemployment 42,8% (29,1% ITA) – People at risk of poverty 41.3% (19.6% ITA); demographic challenge of elderly population
- **Industrial sector** (*stricto sensu*): 9.3% of regional GDP (2011) (18.3% ITA); Agriculture 3.5%; Construction 5.5%; Retail 18%; Financial and professional services 21%; Services (mostly towards Pub. Admin.) 29%
- On average **R&D**: 1% of GDP as R&D expenditure (0,8% public & 0,2% private), aprox. stable trend. (ITA 2% on average of which 0,7% private). Recent decrease of R&I workers. Indicators do not take into account expected '07-'13 regional and national interventions impact
- **Public research bodies** key players in the R&I arena but with lower than national average patenting also because of poor market oriented research
- According to EC **Regional Innovation Scoreboard 2012** report from "modest innovator" to "moderate innovator"

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Overview on R&I context policy

Up to 2000
- Almost no regional role on R&I policies.

2000 2006
- I[st] RIS. Mostly orientated towards an infrastructural approach

2007 2013
- II[nd] RIS. New priority setting & new governance model proposed

External evaluation

2014 2020

2014-2020 RIS[3] <<>>

- No "formalized" national RIS but strategic lines identified >> 9 national clusters (Sicily Region endorsement in agri-food, smart factory, life sciences)
- Coordination between national and regional level >> specific project promoted by the Min. for Economic Develop.

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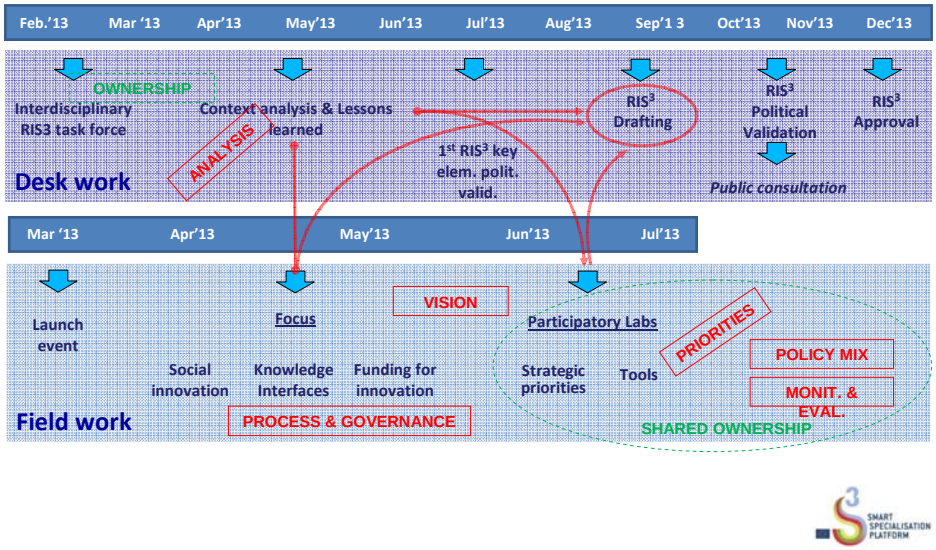
Pattern towards Sicily RIS[3]



Main evaluation findings & lessons learned

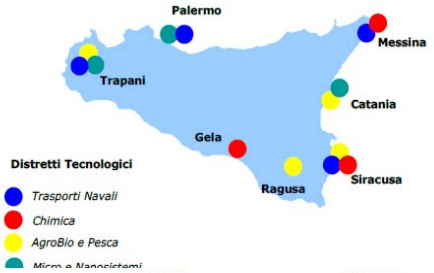
- High-level of public expense in R&S, Univ. & research bodies with distinctive competences, highly qualified R & S human capital, but no particular evidences of performance (patents, spin-off, etc).
- Lack of proper governance of the regional research network; lack of stable interconnection between research demand & supply
- Regional strategy for the innovation with too many thematic and priority sectors
- Procedures and response time not in line with firms needs
- Some positive effects of aids provided to SMEs in terms of innovation of production system despite an entrepreneurial fabric highly fragmented characterized by low propensity to innovation and scarce ability of patenting in hi-tech sectors
- Potentialities of the technological districts not fully exploited because of a) weakness of the regional strategy, b) not sufficient physical capital and uncertainty about financial resources, iii) incomplete "consolidation" of the system of governance
- Difficult funding for the enterprises

Building the evidence base for RIS^3

Strengths and main competitive advantages	Weaknesses and main current challenges
Widespread natural assets to be sustainably exploited as "raw material" (i.e. agro industry, tourism, sea, natural energy potential)	Weak economic environment, traditional business SMEs mainly undercapitalized, limited clustering of businesses, modest internationalization (*on average*)
Quite comprehensive research infrastructures to be orientated towards results	Light manufacturing sector very small
Some clusters of economic activities export-led (i.e. agrifood, tourism, tech, ICT) territorially localized (mainly SW & SE)	Unbalanced economy depending too much on public spending
Etnavalley as one of the main southern ITA prod. systems	Weak links between firms and research
Some key player in high tech and innovative business (i.e. micro electronics, red bio-tech) with acknowledged international role	Already collapsed industrial sectors and long term unsustainable businesses
Good territorial coverage of the broad band net.	ICT potential for business poorly used by SMEs
	Low quality of public digital services
	Few FDI
Opportunities for future regional development	**Threats the region is facing**
Scientific and technological expertise on some KETs with high growth trend (micro, nano and red-biotech)	Brain drain of highly qualified & high potential human capital
Incentives spurring cooperation between research bodies and SMEs	Increasing competition at global level in high tech sectors
Specialized manufacturing skills to be reconverted	Modest absorption capacity of innovation from the regional Public bodies
Decreasing costs for accessing ICT based services	
Easier access to ICT by the citizens due to digital convergence processes	

Main research & interface infrastructures

- 4 Universities covering a wide range of tech & non-tech areas
- 3 + 4 Tech districts (Agro, Ship building & nautical, Nanotech + Biotech, Cultural Heritage, Sea, New materials)
- 1 Tech & Scientific Park
- 3 ILOs & 3 Business incubators
- CNR branches (Biomedicine (PA), Energy (ME), Micro electronics (CT) + 15 other territorial units)
- INGV, INFN, ISPRA
- Regional research centers mainly on agro industry



Entrepreneurial process of discovery

- Weak industry structures and entrepreneurial capabilities >> Not so many examples of entrepreneurial process of discovery, despite not completely absent
- Innovators: (1) SMEs mainly in traditional sectors and not oriented to innovative processes, most of the “innovative” ones look at innovation as a “black box” (i.e. new machinery); (2) only few large enterprises & innovative companies make R&I mainly by using their own financial resources.
- Some knowledge interfaces created over time: Technological districts (3+4), ILOs, business incubators; Capacity to produce innovation is not even among them.
- Lack of overall governance; Some knowledge interfaces good examples but marginal spill over effects. Some of the structures too young to evaluate their performance
- Lately a bunch of interesting young start-up either with entrepreneurial potential (also within market niches) or in response to emerging societal needs
- **More detailed discussions with entrepreneurs are planned with a view to investigate how stimulate their innovativeness and evaluate the role of knowledge interfaces**

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How to choose our RIS^3 priorities then …

From RIS3 Guide … not diversification by itself but technological diversification

building Sicily's competitive advantages by combining unique & localized knowledge base into new innovation patterns …

Selecting priorities adopting at least two of the following criteria:

- Starting from existing assets related to the specificities of Sicily
- Focusing on scientific and technological areas in which the region is already showing good results
- Taking into account areas & applications presenting the most widespread potential impact on the territory

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Tentative vision

…. still lacking of a proper "vision" but we head for a differentiated strategy aimed at…

	What	Why	Enabling Factors
1	Upgrading traditional clusters with the highest potential impact in terms of economic performance and employment	Adding value to traditional businesses to boost their competitiveness	Regional place based assets + Traditional businesses + tech & non tech innovation
2	Reinforcing the presence in the global value chain where Sicily has already a distinctive international role	Enhancing the role of leading regional innovative systems	Regional key expertise areas + Large firms & SMEs
3	Enhancing the innovative productive tissue with a view to target unsatisfied societal needs	Taking advantage of the potential spill over effects coming out from the contamination of KETs and regional assets	New entrepreneurs & social innovators (tech and non tech)

… Where & How …

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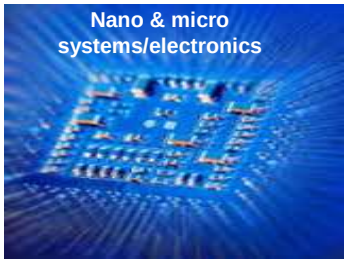
A preliminary set of priorities includes the following … :



- CNR - Institute for Microelectronics & Microsystems (CT)
- Multinational company with production facilities (STM, Engineering, etc) & satellite activities (overall ~ 450M export)
- MicroNano System Tech district (over 60 labs + 12 international research poles + high level computational cluster + 11 industrial research labs + university international network)

- High level players in the field of advanced biosciences & health sciences (ISMETT) + cluster of biotech small firms
- Bio Medicine tech district
- Medicament production firms (overall export UE + extra UE ~ 250 MEuro)

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- High potential productivity (sun, sea, bio, …)
- CNR ITAE – Advanced Technologies for Energy
- Some high tech companies
- Manufacturing expertise to be reoriented (previously in car production)
- Public Private Lab on energy issues (En.Lab.)

- Primary relevance economic sector (2011 >4M arrivals; >14M presences – highly season sensitive)
- Various touristic clusters and UNESCO sites
- Widespread natural and cultural assets
- Cultural heritage tech district

- Natural assets & high quality production (>50 products certified), export led clusters ~7% total exports transformed and not transformed)
- Business base (~10% labor force)
- AgroBio and Fishery Tech District
- Specialised research capacity within public & PP research bodies

- Very high potential of bio resources unexploited
- CNR IAMC – Inst. Marine Costal Environment
- CNR IBIM – Inst. BioMedicine & Molecular Immunology
- Key national research centers (ISPRA – INFN)
- Various others research bodies
- 2 tech districts (sea environm. + ship building and nautical)

….to be interconnect into a more focused specialization based on further analysis and political validation

Looking beyond regional boundaries

- On going assessment of positioning of region's economic and innovation system within the EU and looking at global trends … also by means of key stakeholders support and with the co-operation of the central government
- Also .. a network analysis of external & internal relationship of the regional innovation system (Universities + Interface infrastructures + research bodies) is planned
- Willingness to enhance the role of the territorial cooperation instruments
- Interest to benchmark with other region's work on R&I … planned with other ITA regions (Apulia, Emilia Romagna)

Digital growth priorities

- Policy framework for digital growth as key part of RIS^3
- Integrated SWOT analysis performed to identify action priorities
- Some key issues already identified:
  - Better balance between demand and supply.
  - Promoting advanced use of broadband and ultra wide infrastructure by acting on the reinforcement of digital skills
  - Stimulating use of ICT as KET for innovating SMEs belonging to mature sectors and as a social innovation tool

Implementation & Budget

View on action plans and roadmaps under construction … some first inputs:

•Stronger interaction between different policies and funding sources supported by territorial based approach

•Stronger involvement of new stakeholders and partners in the design of the implementation tools

•Attention to the role (pilot projects) and added value of social innovation acknowledging the ICT great potential

•More tailored instruments to the specific characteristics and needs of beneficiaries (i.e. start-up & SMEs)

•Promoting innovative financial tools (seed capital, venture capital) and public-private funds to support early stage innovation

Measuring success …

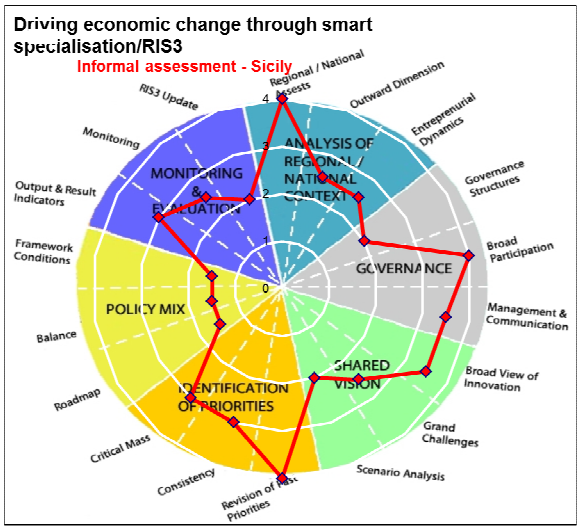
Monitoring and evaluation framework not defined yet … but some key elements identified:

•Moving away from a compliance approach towards a systemic approach aimed at steering the policy (creation of high profile steering group)

•Measuring performances and results with a multiple perspective:

- assessing policy impact by means of standardized indicators such as IUS indicators with the aim to comparing progresses
- On going measuring of involved actors performance by means of specific output indicators (i.e. number of start-up, n. of patents/application for patents, n. projects funded under Horizon 2020, etc.)
- Definition of a national methodological framework expected

Self assessment



Summary & next steps

1. Further analysis on distinctive competences (both in terms of research capacity and human skills) and embedded potential of endogenous assets
2. Further discussions with the productive sectors
3. Scenario Analysis
4. Final identification of priority setting

Issues to discuss with peers

1. How much “thematic / sector focused” a strategy has to be in order to be potentially successful?
2. Understanding how we can better engage our business base with R&I & how can available research capacity be oriented towards “marketable” results
3. Discussing about best practices for the enhancement of business base by means of technological/ non technological innovation processes. Best suited instruments, actors, policies?
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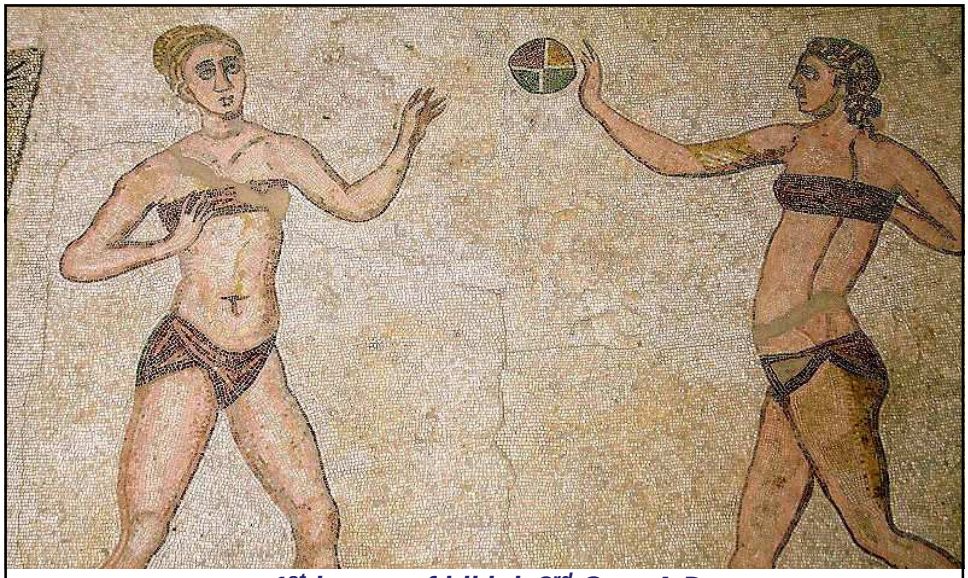

1st image of bikini, 3rd Cen. A.D. ,
Roman "Villa del Casale" Sicily, www.villaromanadelcasale.it