Islands of Innovation
Interreg Europe

Comparative Country Study

Part I – main report

Working draft (3rd version)

October 12, 2018

https://www.interregeurope.eu/islandsofinnovation/

Interreg Europe
provinsje fryslân
provincie fryslân
European Union
European Regional
Development Fund

Islands of Innovation
Interreg Europe

CONTENTS

1. INTRODUCTION

This report describes the outcomes and findings of two surveys held in the early phase of the Islands-of-Innovation project (Project). One survey concerns basis statistical data on the islands and island regions, the other a questionnaire on the innovation systems and policies applied.

Furthermore, in a first draft of this report it was concluded that an extra research activity was needed, to get insight in the policy instruments the islands' governments apply today, and also on their ambitions in the future. This additional activity has led to the development and testing of the TIPPING Wheel approach, on which has been reported in a separate note. For the reader, it is good to note that (1) the country data report, (2) the forthcoming report on best practices; and (3) the TIPPING Wheel manual –under construction- are considered as inextricably linked, essential parts of the Islands-of-Innovation expertise system.

The aim of the study is to describe and compare project participant islands and their innovation policies as to understand the different contexts of the participant islands and develop next options for the innovation policy developments for project participants, according to the Project objectives, with a particular focus on creating an innovation-promoting, experimental "probing and learning" environment.

Following partners and islands participate in the Project:

- Province of Fryslan,with islands of Ameland and Vlieland (the Netherlands);
- Samsoe (Denmark), project partner: Samsoe Energy Academy (Denmark);
- Saaremma (Estonia); project partner Saaremaa Municipality Government (Estonia);
- Madeira- project partner Regional Agency for the Development of Research Technology and Innovation – ARDITI (Portugal);
- Azores; Project partner - Cabinet of the Secretary of the Presidency for External Relations – Regional Government of the Azores (Portugal);
- North Aegean region - North Aegean Region (Greece);
- Urban Community Of North Basse-Terre (CANBT) - Guadeloupe (France).

2. FINDINGS AND FIRST CONCLUSIONS

I. TERRITORY AND POPULATION

The Islands-of-Innovation group is in particular characterized by its richness of nature and the existence of various special natural resources on its islands. Although all involved islands/regions in the Islands-of-Innovation project show territorial similarities, crucial differences exist. They concern amongst other essentials like the geography (volcano mountain islands versus flat islands), climate (semi-tropical versus Nordic), physical distance to the mainland (from a short ferry boat trip to

several flight hours, with inherent low and high transport and travel costs) and even on the way of addressing problems (far from strong centers of R&D, talent and new technology).
But particularly, the differences in size and constitution are obvious. In this respect, the project islands can be divided in three groups: the Azores, Madeira, the North Aegean archipelagos and Guadeloupe as large island groups forming archipelagos versus Ameland, Vlieland and Samsoe as small island groups (a few percentages of the size of the big ones), and Saaremaa as one one-piece big island. Not only the territorial surface of the differs tremendously, but also the number of people living in these regions, with only ca. 3.600 inhabitants on Ameland and 255.000 inhabitants on the Madeira archipelagos as the extremes.

With these different contexts and scales, it is not surprising to identify also a large diversity in governance systems in place. Where Ameland, Vlieland and Samsoe are mainstream small municipalities with a few scattered villages, ruled as one municipality by a mayor, a few aldermen and a local council, the archipelagos island groups are governed by a more extensive, complex system with an own Regional Government, and representatives of the different islands and towns in a large Regional Council. The Azores and Madeira even have a specific political and administrative statute foreseen in the Portuguese Constitution. Again, Saaremaa is in between these two groups, being constituted recently as one municipality, but including the former eleven rural municipalities (there are 1 city, 9 rural small towns and 426 villages in current Saaremaa Municipality) and a city.

Guadeloupe is an archipelago and CANBT a part of it. Depending on the field, it's ruled either by a President and representatives from 6 municipalities or by the Regional Council both under the watch of Prefet (Representing the French Administration)

In general, in this project, it is hypothesized that the larger, autonomous island regions have relatively more decision power, reach, networks and means. Therefore, in principle, they would have the better innovation potential and opportunities. On the other hand, it could be expected that the smaller islands will have a stronger focus and a "bricolage" based approach of innovation, with unexpected creative elements forced by their scarce means.

II. PROBLEMS/OPPORTUNITIES

From both surveys, it is clear that many problems on the island are the same: on most islands the youth is leaving due to the lack of perspective on proper education and jobs. Many islands have a greying population problem, however in the Aegean North young adults and middle age groups are returning to their islands of origin from the larger Greek cities and the Azores have the lowest average age in Portugal. On most islands tourism is a dominant sector, followed by agriculture. Since these sectors involve a majority of micro-enterprises and low R&D levels, the adoption and diffusion of innovation is not high on the agenda or implemented, and usually has an

incremental nature. Therefore, many islands not only look for innovation in the tourism, agricultural and agribusiness sector, but also seek for diversification of their economy and focus on a specialization.
It is also obvious that huge differences exist in the economic circumstances, e.g. the average income and the growth of the GDP between the islands involved in this project.
.

III. KNOWLEDGE/INNOVATION SYSTEM

The five larger island regions (Madeira, Azores, North Aegean, Guadeloupe, and Saaremaa) all have a university and/or other higher education and research institutes. The smaller ones (Ameland, Vlieland, Samsoe) don't have a higher education institute, but have created their own applied institutes and network-organizations on the island to foster knowledge import, innovation projects and knowledge export.
In the survey, it is mentioned that the existence of a university on an island is not a guarantee that its program is also including the islands' problems and opportunities.
The majority of the larger islands, mostly with their university as basis, also have incubator facilities to start spin offs or stimulate new ventures. In addition, special new technology centres have been created to provide training for existing businesses and special applied institutes with a local focus have been established.

IV. INNOVATION POLICY AND INSTRUMENTS

All islands are active with innovation, however with different ambitions, strategies, planning and methodologies. The Azores and Madeira have based their plans explicitly on a systematic application of the RIS Smart Specialization approach. Others have been inspired by RIS to develop their own strategic and operational plans for innovation. It is observed - and was by definition being expected - that the smaller islands have a more bottom-up and informal approach compared to the group of bigger islands.

It has been not possible, based on the data from the surveys, to get a sufficient understanding of the precise innovation policy mixes each region or island community is applying. Therefore, it was decided early in the project, to design a special methodology in the Islands-of-Innovation project, via an added, extra interim trajectory on exploring the policy instrument mix design, under the heading of the TIPPING Wheel method. This necessary extra activity has confirmed two assumptions which were formulated during the project: (1) relevant new insights on innovation policy instrument mixes depart from Open Innovation models on entrepreneurial behaviour, rather than old fashioned –legal, regulatory- policy instrument theory; and (2) recognizable best practices ("benchmarks") are indeed powerful motivators to stimulate, facilitate and accelerate advanced innovation policy diffusion. The TIPPING Wheel tests –as described in Phase II of the project reporting- have also strongly confirmed the need for innovation policy makers and

implementers on the involved islands to apply practice based new instruments in their policies, which build on design thinking and long-term cooperation with start-ups and existing enterprises.
This additional activity has given an extra insight and dimension to the project, and allows from the smallest governmental units on islands (municipalities) to the level of regional councils, the development of new pathways for their innovation aimed instruments.

V. FOCUS/AMBITION

Both the focus and future ambitions on innovation differ per island, although almost all are aiming at innovation of the tourism and the agricultural sector, in the perspective of sustainable development. In close connection, local productions and their branding as well as E-commerce are mentioned. ICT and E-learning are considered relevant, particularly by the large islands, located far from the mainland and with a university campus. The Azores and Madeira, with their embedment in the Atlantic, have priorities with products from the sea, or even further as global networked earth observation center. Saaremaa, Ameland and Samsoe mention also social innovation as one of their priorities, while Samsoe and Ameland will focus on energy/water autonomy in a circular economy perspective. Besides tourism and agriculture, Guadeloupe's focus is based on biodiversity valorization from land and sea. In Vlieland focus is Liveability: how do we keep our youngsters on the Islands? How do we keep the education on the Islands? How can we take care that old and young can keep living on the Island?

VI. POINTS for DISCUSSION

Several points for discussion in the next meetings of Islands-of-Innovation have been formulated and are listed here as bullet points:

- A better understanding of the notions "Innovation", "Innovation Policy" and "Policy Instruments", as used and applied by the different government islands/island regions;
- Experience and observed relative advantages/disadvantages of RIS approaches versus other non-RIS approaches;
- The role of prior experiences with innovation policy instruments versus new developments and benchmark best practices;
- The consequences of the Open Innovation business model for policy makers and implementers;
- The contribution of the own higher education institute(s) to the islands' problems;
- Innovation policy making vis-à-vis the role of start-up and scale-up programs of official and non-official incubators, on large islands and on small ones;
- The role of tacit knowledge and cultural heritage in innovation on the islands;
- Mutual learning: from small versus big islands, from North versus South and East versus West, but also on the different innovation approaches of similar challenges: ageing population, jobs for young adults, diversification of the economy, design thinking for administrations;

- Emerging paradigms for innovation and entrepreneurship: festivals for innovation.

3. STUDY PART I - BASIC DATA

TERRITORY

1. **Size**: from 36,13 km^2 (Vlieland) to 3.836 km^2 (North Aegean)

2. **Constitution of islands**: from 1 small island (Ameland, Samsoe), 1 big island (Saaremaa) to a 3 islands group (Madeira) and a 9 islands archipelagos formation (Azores, North Aegean). Archipelago with 2 main islands and 4 lesser islands (Guadeloupe), North Basse-Terre is a part a main island.

POPULATION

3. **Population**: from 1149 on Vlieland (least inhabitants) to 255.000 on Madeira (most inhabitants).

4. **Population density**: from 11.7 per km2 (Saaremaa) to 308.5 per km2 (Madeira).

5. **Unemployment rate**: from 3,6 – 5,3 % (Saaremaa, Samsoe, Ameland) to 10-11 % (Azores, Madeira) to 22-24 % (North Aegean, Guadeloupe). Particularly the economy of the North Aegean islands requires an impulse towards more regional and local job opportunities' development.

6. **Young age group ratio** (15-29 year): from 10-12% (Samsoe, Ameland) to 18-24% (Madeira, Saaremaa, North Aegean, Azores, Guadeloupe). The Northern European islands have relatively less young people in the age group 15-29 on their islands.

ECONOMY AND ENTREPRENEURSHIP

7. **Main economic sectors**: Both the Tourism sector and the Agricultural/Agribusiness/Forestry sectors are dominant on most islands. For some (Azores, Saaremaa, North Aegean) Fisheries is also an important sector. On Ameland the dominant sector is Tourism. The sector Other Services is important on all islands. No large industrial sectors are based on the islands.

8. **GDP per capita:** the GDP per capita on the islands varies from € 15.300 per year (North Aegean) to € 31.000 per year (Samsoe).

9. **GDP per capita growth**: from negative -2,3% (North Aegean), around 0 (Madeira, Azores) to 1-2% (Samsoe, Ameland, Guadeloupe) and 18% (Saaremaa – overall figure for Estonia).

10. **Number of active enterprises:** the number varies between 358 (Samsoe) to 25.917 (Azores
Active enterprises per population: from 1% (Guadeloupe) to 15.60% (Vlieland)

INNOVATION

11. **European Innovation Scoreboard**: the Islands of Innovation include three Innovation Leaders (Samsoe, Ameland/Vlielanda and Guadeloupe) and four Moderate Innovators (Azores, Saaremaa, North Aegean and Madeira).

12. **Regional Innovation Scoreboard**: four islands score Modest Innovator, while Samsoe scores as Innovation Leader in the Midtjylland region and Ameland and Vlieland as Strong Innovator in the Frisian region.

13. **Main Innovation Focus**: Four islands (Saaremaa, Madeira, Samsoe & Ameland/Vlieland) mention the generic “Testbed for Innovation” as their main focus. Others focus in particular on Agriculture & Agribusiness (Azores, North Aegean, Guadeloupe), Fisheries/Sea & Sea oriented Technologies (Azores, Madeira), Tourism (Azores, North Aegean, Madeira, Samsoe, Guadeloupe), the E-Economy (North Aegean), Renewable Energy (Samsoe) and New Business Facilitation (all islands).

EDUCATION

14. **Tertiary education percentage**: The cohort of tertiary education varies between ca. 14% of the population (Azores, North Aegean, Madeira) to 21 % (Samsoe) ,28 % (Saaremaa) and Guadeloupe 44,9%.

Interreg Europe
provinsje fryslân
provincie fryslân
European Union
European Regional Development Fund

4. STUDY PART II - INNOVATION CONTEXT AND POLICY

General

Geography

It is clear that the involved islands differ to a large extent when it comes to size and location. On one hand, we have the group of larger islands, including 3 archipelagos, (Azores, North Aegean, Madeira) and Saaremaa versus, on the other hand, the relative small islands of Ameland and Samsoe. These last two are also relatively close to the mainland (0,75 h. to 1,5 h. per ferry boat) while Guadeloupe, Madeira and the Azores are some flight hours away from the continent. Saaremaa is also close to the mainland (0,5 h crossing by ferry).
The consequence of the location type is that, in principle, people at Ameland and Samsoe can exercise jobs on the mainland and be daily commuters. Vice versa mainlanders can have –and have indeed- their job position on these islands. Being relatively close to their islands of birth, mainland residing students born on these islands can and do commute in the weekend, to either visit family and friends or to perform a weekend job. Such a regular in- and out-flux of employees and students doesn't take place on the group of the larger islands, due to the considerable distance from the continent.

Sizes and Government Structure

A similar group distinction can be made in regard to the government structure. The small islands of **Ameland, Vlieland and Samsoe** are governed by a Mayor & Alderman, with democratic control from a local council, while belonging to a larger region (Province of Fryslân, County of Odder), which includes the adjacent part of the continent.
The extensive **Azores, North Aegean and Madeira archipelagos** are managed by a President or Governor of the Regional Government, while the inhabitants are represented in an Assembly. The special political status of the **Azores and of Madeira** are defined by their respective Political and Administrative Statute which defines the scope of the autonomous regional governments and the structure and functioning of the region's organs of government within the framework of the 1976 Constitution of Portugal. These two Portuguese autonomous regions are an integral part of the European Union and have the status of outermost region as defined in Article 349º of the Treaty on the Functioning of the European Union.
While the Autonomous Region of the Azores comprises 9 Islands (São Miguel, Santa Maria, Terceira, Faial, Pico, São Jorge, Graciosa, Flores and Corvo), the autonomous region of **Madeira** includes the islands of Madeira, Porto Santo and Desertas, administered together with the separate archipelago of the Savage

Islands. As Portuguese citizens, Azores and Madeira's population vote in national, regional and local elections.
The **North Aegean** region is an insular, archipelagic region as well. The region was established as a second-degree local administrative unit, in the 1987 administrative reform. In 2010, an administrative reform into the first-degree level of local authorities (municipalities) has contributed each island the status of a municipality. The capital of the region is situated in Mytilini on the island of Lesvos. Since 1 January 2011 the North Aegean region is divided into 5 regional units: Chios, Ikaria, Limnos, Lesvos and Samos.
The prefecture of Lesvos includes the islands of Lesvos, Limnos and Agios Efstratios, the prefecture of Chios includes the islands of Chios, Oinousses and Psara and the prefecture of Samos includes the islands of Samos, Ikaria and Fournoi.
As far as **Saaremaa** is concerned, previously, the island of Saaremaa was divided into 12 administrative units, 11 municipalities and Kuressaare city. As a result of a recent administrative reform, the island has become one unit, Saaremaa Municipality per 01.01.18. From this date on, the county consists of Saaremaa, Muhu and Ruhnu municipalities, all being islands.
Guadeloupe is an archipelago and CANBT a part of the 6 urban communities. The territorial communities are composed of three levels: the municipalities and urban communities, the department and the region. CANBT is ruled either by a President and representatives from 6 municipalities, Deshaies, Goyave, Lamentin, Petit-Bourg, Pointe-Noire, and Sainte-Rose.

Therefore, in the Islands-of-Innovation project we will find a great variety in governance systems. In general, the larger governmental bodies are expected to have more influence, budget, other means and legislative power, but also larger administrative burden. The smaller islands are allegedly less bureaucratic and they are less complex when it comes to decision-making but their potential, resources and means to develop a powerful innovation policy instrument mix, seem less favourable compared to the large islands.

Climate and Natural Resources

The climates on the Islands-of-Innovation differ from a mesothermal moist climate (Azores), Mediterranean (Madeira, North Aegean), Caribbean (Guadeloupe) to typical Nordic (Ameland, Samsoe) or Baltic climate (Saaremaa).
The southern, mountainous islands all have –active/passive- volcanoes as natural resources and possibilities for geothermal energy as a consequence.

Frysian islands **Ameland and Vlieland** are typical low-land islands, surrounded by the Wadden Sea and North Sea, with sand dunes as only natural hills. The island would completely disappear under water if, as predicted in several scenarios of the future, sea levels –due to climate change- would rise to ca. 10 meter above the level of today.

All islands have a rich natural environment and protected regional and national nature parks, some under the umbrella of UNESCO's world heritage (Wadden Sea/Ameland, Azores, North Aegean). A few islands also have protected Sea resorts and geothermal parks.
The **Azorean islands** for instance, due to their location, climate and volcanic nature, comprise several natural resources, *e.g.* the ocean, forest, soil and geothermal energy, which are crucial for the development of the main economic activities. The biodiversity and geodiversity of these islands are elements of the Azorean identity and a heritage that demands a careful management, permanent and sustainable. In order to preserve this natural treasure, a legal conservation framework established the Regional Network of Protected Areas that includes nine Island Natural Parks and one marine park. This governance structure allows a territorial management oriented to the biodiversity conservation, as well as for a sustainable use of the natural resources, in order to empower the tourism and welfare of the population.
However, as other Atlantic archipelagos, the Azorean islands are a territorial system with high vulnerability to the effects of environmental factors, such as climate change, oceanographic conditions and geological risks. Considering the geographic and morphologic characteristics of the insular territories of volcanic origin, even in potential scenarios with minor amplitude, the small local scale results in problematic environmental and socioeconomic impacts. Moreover, the human impact derived from resources exploration and economic development activities could amplify the adverse effects on the environment.

Guadeloupe benefits from a tropical climate tempered by the trade winds oriented towards the East by the Azores anticyclone. There are two seasons, a dry season called Lent from December to May and a wetter season called wintering during which tropical depressions and cyclonic events occur. Guadeloupe has a rich and diverse natural heritage. Fauna and flora are influenced by the island character: Guadeloupe is thus part of 34 global hotspots.

Likewise, but in another context, the island of **Samsoe** is confronted with the negative impacts on its natural resources coming from (1) tourism, threatening the environment, (2) water based enterprises threatening the surrounding sea, and (3) agriculture threatening the drinking water.

Natural and Cultural Heritage

All islands are rich with respect to their natural and cultural heritages with some artefacts and events even going back to ancient periods.
The case of the **North Aegean** islands is very illustrative here: its resources include many important geological findings, such as the Petrified Forest in Sigri, Lesvos (among the two most important worldwide), and in Limnos.
There are also several thermal springs in Lesvos and Ikaria and a few in Chios and Limnos.
The cultural heritage of the islands is also very rich, including archaeological sites, and monuments of national and worldwide importance (UNESCO):

In North Aegean, for instance, one can mention byzantine fortresses, religious monuments and monasteries, important ancient villages, and villages of traditional North Aegean architecture, buildings and urban quarters of important urban architecture, historical sites and museums.
The strong insular character of the North Aegean Region is reinforced by the special identity of each island, a fact that reflects on the plethora of local resources, which gives high quality agricultural and farming products. Some of the products of Protected Designation of Origin (PDO)/Protected Geographical Indication (PGI) are: mastic of Chios, olive oil of Mytilini, wine of Limnos, wine of Samos, "kalathaki" cheese of Limnos, "graviera" and "ladotyri" cheese of Mytilini, Ouzo of Plomari, Ouzo of Mytilini and tourism specialties focussing on spiritual relaxation, religious, outdoor activities and hot spring waters experiences.

In the Azores, one can refer to the UNESCO classified Landscape of the Pico Island Vineyard Culture, the Central Zone of the Town of Angra do Heroísmo (Terceira Island), the Biosphere Reserves of the Islands of Corvo, Graciosa, Flores and São Jorge and the Azores UNESCO Global Geopark which includes 19 municipalities and 156 civil parishes.

The Azores also counts with several products of Protected Designation of Origin (PDO)/Protected Geographical Indication (PGI) such as wines like “Biscoitos”, “Graciosa”, “Pico” and “Azores”, cheeses as the ones from “Pico” and “São Jorge”, the Azores meat and honey, and fruits such as pineapple, passionfruit and the “Santa Maria melon”.

Saaremaa considers its natural resources such a dolomite, limestone, curative mud, mineral water, sand and gravel, ceramic clay, timber, wind, richness in species of flora and fauna and a clean natural environment as its precious heritage. Likewise, also Ameland (sun influx) and Samsoe (wind) build on their respective natural resources.

Saaremaa, Ameland and Samsoe also mention the importance of social capital and community resources, such as active and involved community groups in neighbourhoods and villages, as an essential asset for innovation on islands.

Population Dynamics

Ameland, Vlieland and **Samsoe** are dealing with young people structurally leaving the islands for a study or job position on the mainland. Therefore, during the high-tourism season, they have difficulties finding people to fulfil all vacancies in the tourism sector. In addition, the islands are “greying” with its own elderly inhabitants and import-ones from the mainland, buying a second home on the island. On Ameland, since 2000 the age category of 65-75 year has increased from 235 to 473 in 2015, while the number of 18-25 year young adults has been reduced from 326 to

Interreg Europe
provinsje fryslân
provincie fryslân
European Union
European Regional Development Fund

181 during the same period. In addition, the numbers of children and young adults attending the schools on the island is steadily decreasing.
Similar to other peripheral regions in Estonia, the population of the **Saaremaa** county is in decline, losing people mainly to the country's capital region. In 1992, the population was 40 140. In 2000-2015, the number of inhabitants was steadily decreasing from 35 850 to 31 706 (12%). Due to changes in the official statistics methodology, the number of population counted 33 481 in 2016, being 33 307 at the beginning of 2017 which makes a loss of another 0.5% in a year. Due to natural decrease, the rate of children is becoming less, negative net migration means mainly working-age people moving away, leaving, thus, the older age people the increasing group of the population.
In the 2001-2011 period (last national population survey), also the population of the **Azores** has aged, although the average age is the lowest in Portugal (37.3 years-old). Regarding the population structure by age, the main trends are as follows: i) the younger population (0-14 years-old) decreased (21.4% in 2001, 17.9% in 2011), being the percentage of young males higher than females (18.6% vs 17.2%); ii) the age group between 35 and 64 years-old reinforced their importance, increasing from 33.4% in 2001 to 39.2% in 2011; and iii) the oldest population (more than 64 years-old) was practically stabilized (13.0% in 2001, 13.1% in 2011) and, in contrast with the younger population, the percentage of females was higher than males (15.4% vs 10.8%).
With respect to the **North Aegean**, the last national population survey for the region was held in 2011. That showed a high percentage 70+years old segment of the population, while the population of the region is getting older. In addition, the relative high percentage of population in the age group of 20-29 years can be explained due to students attending the University of the Aegean. A part of them have their origin from another part of the country or from other countries.
Since the economic crisis, the tendency has emerged of younger and mature segments of the population, many of them originally from the islands, to return to the North Aegean islands. They are leaving the large urban centers, due to the high levels of unemployment, and are starting new business on the islands with agricultural products and in the tourism sector. Furthermore, since 2015 until now around 8.000 refugees, with an origin from various Asian and African countries, are in camps on the islands.
On **Madeira**, according to the Resident Population Estimates, the population of the Region has been dropping consecutively since 2011. The decrease in the resident population is explained by both the negative balance in net migration and by a negative natural change.

As of January 1, 2017, the population of **Guadeloupe** is estimated at 393,640 inhabitants, or 2,372 inhabitants less than in 2016. Women outnumber men (about 54.3% of the population). Over the 2010-2015 period, the population was reduced by 16,482 individuals simply because of the migratory deficit, ie 4% of decline. Young people aged 18-25 tend to be more numerous and cancel the natural surplus. The aging of the population continues.

Innovation System

Economy

Tourism and Agriculture are the most important economic sectors on the islands. Usually, in the places where the Tourism sector is dominant a large number of micro-enterprises exists, together sometimes counting more than 90% of the economy.

On **Ameland,** Tourism & Recreation is the main economy sector with ca. 600.000 visitors/year, including hotels (22), campsites (13) and restaurants (31). Second in size is the Commerce and Other Services (transport, health care, etc.) sector. The sector Agriculture is relatively small on the island (ca. 15 nature inclusive farm companies) but has a strong exposure due to the various locale productions with a high reputation.

On **Vlieland,** Tourism & Recreation is the main economy sector with ca. 200.000 visitors/year, including hotels (10), campsites (2) and restaurants (26). Second and third in size is the Commerce and Other Services (transport, health care, etc.) sector and the Agriculture sector with ca 25 companies.

In the **North Aegean** region, the tertiary sector also dominates the economy, as it employs the 71% of employees and produces the 85% of the total GDP. Similarly, the secondary sector participates by 16.4% in total employment and the primary sector by around 13.3%, with much lower participation rates in the total GDP. Therefore, one of the problems-disadvantages of the North Aegean Region's productive-business base is the relatively low labour productivity in the secondary and tertiary sectors. In the tertiary sector, entrepreneurship is expressed almost exclusively by three branches of economic activity, trade, real estate management and tourism. The remainder of the tertiary sector lays on public administration, which has increased participation rates in the employment of the Region. All economic activities of the sector during the crisis have been dramatically decreased, both in terms of GDP and employment.

The top 3 industries in the region (in terms of share of employment) are: Wholesale and Retail Trade; Agriculture, Forestry and Fishing; and Hotels and Restaurants.

There are no large companies situated in the North Aegean: ca. 96% of the enterprises of the region are micro-companies.

The traditional activities of the **Azores** Islands are based in the primary sector, in particular agriculture and fisheries. The Azores agriculture sector is responsible for over 30 % of Portugal's milk production and about 50% of the cheese production and are also producures. Dairy products and meat (cow beef) and canned fish are in the grounds of the local industry. Wine, pineapple and tea are also productions emblematic to these islands.

In 2016, the tertiary sector accounted for 75.1% of the total employment, and its most relevant activities were the public administration (29.7%) an traditional trade (23.6%), the secondary sector with 15.3%, and the primary sector with only 9.6% of the employed people. In the tertiary sector, tourism is considered as a strategic priority for the development of the regional economy, mostly due to the distinctive natural characteristics of the archipelago. Actually, the mix of tourist products of the

Azores has been widening in recent years, including recreational boating, diving, cetacean watching, sport fishing, geo-tourism, volcano-tourism, bird watching, amongst others. Moreover, today the Azores present other economic activities with great economic potential as oceanography and blue growth, spatial technologies and biotechnology.
Regarding sustainable development, renewable energies and endogenous resources, in 2015 the production of electricity from renewable sources (geothermal, wind, hydraulic) reached 35 % in the archipelago and 55 % on the largest island, São Miguel, 44 % of which came from geothermal energy. In the years to come the archipelago will continue to invest in innovation, decarbonisation and improving its energy efficiency, thanks to the contribution of electric mobility and storage solutions for emerging technologies.

In **Saaremaa** in the year 2016, out of the employed people 7% worked in the primary sector, 35% in the secondary sector and 58% in the tertiary sector whereas there has been almost no change in the secondary sector since 2000, while the ratio of the primary sector has decreased and the tertiary sector has increased.
Main sectors in 2016 were (in terms of the ratio of enterprises): agriculture, forestry, fishing 25%; trade 11%; construction 9%; professional, scientific and technical activities 9%; manufacturing 9%; accommodation and food services 7%.
Creative industries are not a separate item of the classification, they are dispersed under several items. In 2012, there were 112 enterprises of the creative industry sector with 159 employees, about 60 enterprises with about 400 employees of Green Economy and 146 enterprises of Blue Economy with about 1400 employees, counted in Saare County.
Since 2010, the annual growth of enterprises has ranged between 1-4% annually, yet 2016 compared to 2015 showed a decrease of 2%.
In 2016, out of 3067 companies in Saare County 0.1% were large enterprises (3 enterprises), 0.8% were of medium size, 4.2% small size and 94.9% microenterprises. The proportions have basically stayed the same since 2010. From the micro-enterprises, a significant segment consists of sole proprietors, although their share has fallen from 56% in 2010 to 38% in 2016.
On **Samsoe** the main economic activities are in Agriculture and Tourism. In 2013 14 new enterprises were established (down 7%), of which 2 new enterprises with employees (down 60%). The rate of new enterprises is 5.5%, and the survival rate is 61% compared to 2011. The top three areas for new business development are: Information and Communication Technology; hotels and restaurants; and education and health.

In **Guadeloupe**, the main economic sectors are non-commercial tertiary sector (included administration and public services 48%); commercial tertiary sector (included tourism 37,5%); industry (6,5%); building and civil engineering (5,5%) and agriculture (2,5%). GDP growth rate is 2,20%. Number of new enterprises for the Guadeloupe island have fallen since 2011 (5619), the lowest being in 2015 (4081), and with slight increase in 2016 (4098).

Regarding **North Basse-Terre** (CANBT territory) it's the same tendency with the decrease of new enterprises. Tourism and agriculture are the main sectors of employment besides the non-commercial tertiary sector. There are innovative companies and small business but suffer from the fact that none of the innovation structure are located in North Basse-Terre.

.

Knowledge System and Higher Education

The five large islands/archipelagos all have a –broader oriented- university or a dependence of it (Azores, Madeira, North Aegean, Saaremaa, Guadeloupe). Usually, in close connection to the university, practice-oriented training and business development functions are being fulfilled, of various ways.

In contrast, the two small islands (Samsoe, Ameland) don't have a university. However, **Samsoe** has established its own "university of practice" with an international reputation, the Samsoe Energy Academy, leader in and specialized in sustainable energy transition knowhow and experiences. The cornerstone of its program is the own, successful transition of the island to an almost 100% renewable energy island (wind, solar, biomass both for electricity and heat), which serves as the world "best practice" standard. The next step in the transition is to make the transport (including ferry boats) sector free of fossil based fuels. The Energy Academy has a strong national and international network of universities, experts and practitioners in the field, and attracts more than 5.000 visitors/year.

Likewise, **Ameland** has chosen to establish a structural knowledge network of its own island Energy Company and its municipality with larger stakeholders from the mainland. The island profiles itself as the Energy Transition Experiment and Living Lab of the Netherlands. This strong focus on sustainable energy could be realized by engaging in a long-term partnership with crucial energy stakeholders from the mainland and is represented via the "Duurzaam Ameland" covenant. Started as an initiative of the Ameland Municipality and Amelands' own energy company AEC, the cooperation involves the following organizations: the Municipality, Eneco, Liander, Philips, GasTerra, NAM, TNO and Hanze Polytechnic and the Entrance campus labs. The outcomes of the Duurzaam Ameland program particularly involve Solar Park Ameland, the largest PV-park of the Netherlands anno 2018 (6 MW peak), a smart, green lighting system and hundreds of households with experimental –green gas based- fuel cells, hybrid heatpumps and micro combined heat-power installations, also applied for the business sector.

Along the same line, in 2018, the network-organization "Waddencampus" has been established on the island. Waddencampus coordinates research projects and applied scientific knowledge building, both in terms of students, experts and expertise particularly imported from the mainland. So far, its activities have resulted in the startup of a number of creative industry and new tech-based small companies on the island.

On Vlieland the government will work on cooperation with other Islands, knowledge centres and with partners from the mainland. Their goals is to be CO2 Nutral in 2020. Because of the situation that the ministry of Defence is an important player on

the Island, on Vlieland a Training Ground is situated of the Royal Dutch Airforce, there is a lot of cooperation with them.

On **Saaremaa**, the Tallinn University of Technology (TTÜ) has a unit in Kuressaare, providing two professional higher education curricula. Through the curricula and training sessions provided by TTÜ, product development innovation is spread in the region.
TTÜ also has a R&D unit, Small Craft Competence Centre in Kuressaare that is the major deliverer of technological innovation and facilitator of creation of smart jobs.
Kuressaare City Government (KCG) acted as a partner in establishing the unit and is involved at its strategic management level as well as providing financial contribution for its R&D activity.
The researchers of Tallinn University have had a close cooperation with the local government units in the amalgamation process, contributing to the institutional level innovation. Over the years, KCG has had a case-based cooperation with a variety of R&D institutions.
On the **Azores**, the regional innovation ecosystem is based on a strong scientific know-how in the areas of the Research and Innovation Smart Specialisation Strategy (RIS3), due to the specificities of the region's geographical location and natural conditions. This expertise and the excellence of this know-how may still be further strengthened, not only in favour of regional socio-economic development, but also at the international level, and in terms of the services they may provide the whole European Union as a natural laboratory for research and development. This potential is fostered by the support of European funding programmes, through which the Azores Autonomous Region strengthened the Regional Scientific and Technological System of the Azores (SCTA). The SCTA includes a good representation of the innovation actors, including the R&D structures mainly hosted in the University of the Azores. The main international R&D recognition of the SCTA concerns the natural and marine sciences, specifically the study of deep water, underwater mountains, hydrothermal deep sea vents, the environment and climate change, as well as biodiversity, volcanology/seismology, agro-industrial and marine biotechnology, and space technology.
In the **North Aegean** area, the University of the Aegean is one of the fundamental sources of education and research in the regions of North and South Aegean. With University Units located on five different islands in the Aegean Sea, it has an innovative network promoting a learning and knowledge environment. The University has 5 Faculties, (3 of them situated in North Aegean) namely the Faculty of Social Sciences based in Mytilini, the Business Faculty in Chios-City, and the Faculty of Math Sciences based in the city of Karlovasi on the islands of Samos.
In terms of academic research potential, the University of the Aegean has been developing, since 1984, as a 'networked university' with teaching and research activities dispersed over five Aegean islands and two regions (north and south Aegean). The principle scientific research areas in which the University of the Aegean is engaged are: environmental sciences and technologies, social sciences, finances and business ad-ministration, information and communications

technologies, mathematics and actuarial science, humanities and sciences of education. Given the islands location and multiple sites, the University has been one of the first in Greece to optimize the use of ICT, according to its website. The use of video-conferencing to deliver courses has started in 2016. Since then, the university offers teaching material through an online system (Moodle) and lectures are offered to enrolled students an online conferencing system (Big Blue Button). This is particularly useful for continuing education (Master programmes) of students from other parts of Greece.
This may be a future opportunity to develop further education services at lower cost (reducing need to travel between islands, etc.) or to a wider number of students.
In **Madeira** there is one University with around 5000 students, and several research institutes (Madeira Interactive Technologies Institute, Centro de Maricultura da Calheta, Madeira Oceanic Observatory). ARDITI, the Agência Regional para o Desenvolvimento da Investigação Tecnologia e Inovação, cooperates with all the mentioned Institutions.

In **Guadeloupe**, there is one university with 4 campuses, and additional options within highschools (21 sorts of technician diplomas can be acquired), 2 business schools, 7 preparatory classes for engineering school and 1 preparatory class for high literary studies. Furthermore, 1/3 of the graduated from high school leave for studies in mainland France. Most of them do not come back because of the high unemplyment rate in the island. The R&D workforce represents 0.49% of the active population, and numbers more than 830 people (researchers, teacher-researchers, engineers, technicians).
In some of the Islands-of-Innovation study reports it is mentioned that having a university on the island, not automatically means that it also has a strong focus on local problems and opportunities.

Incubators, business/technology centers, special institutes

The majority of the larger islands, with their university as basis, also have incubator facilities to start spin offs or stimulate new ventures. In addition, special new technology centers have been created to educate staff from existing business and special applied institutes with a local focus have been established.
For instance, **Madeira** has an enterprises incubator, StartUp Madeira.
In the **North Aegean** region, the relative weak innovation performance can be understood when considering the current composition of the regional innovation system. The regional economic structure is dominated by the agro-food & tourism sectors, which are traditionally sectors in which internal R&D expenditure is low.
However, this does not mean that there is no innovation occurring, but that innovation is often incremental, based on application of proven technologies or non-technological approaches (marketing, design, etc.). The existing unions or associations of businesses are often less effective. One example is the olive oil industry, where the members of the Union of Agricultural Co-operatives (on Lesvos), which has governance problems, tend to focus on bulk and cheaper oils and are

struggling financially, whilst around 15 smaller producers which have shifted to organic or specialty oils, are able to command higher prices and are prospering.
As concerns business support services, the regional chambers have business innovation centres, which have been supported in the past by ERDF funds (including through Regional Innovative Actions Programmes (RIAPs)). Moreover, the Regional Fund has participated in a number of Interreg type projects seeking to develop or transfer methods for business support to the islands, including a project on one-stop shops and, according the RG representative, is currently trying to develop an online 'business Facebook' for regional firms. However, the participants at entrepreneurial discovery process focus groups in the frame of RIS3+ underlined that the only time an in-depth analysis of business needs and sub-sequent project development had occurred was during the RIAPs. There was a general view that regional firms were not being provided with adequate support to enable them to exploit the potential opportunities and overcome the specific development obstacles due to insularity.
For the **Azores**, the existence of infrastructures and facilitating instruments for the promotion of technological transferability is an essential condition for the success of many business initiatives. Therefore, the establishment of partnerships with external entities, the promotion of university/enterprise interfaces in technology parks, and the creation of entities to support technological transferability are crucial to provide new dynamics, facilitate access to new technologies, and guide them to the enterprises and the market. For those purposes, the technological park Nonagon, which started operating in 2015, plays a crucial role. This institution is the only technology-based incubator in the Azores (with EU|BIC accreditation), provides value-added services for tenants in its facilities (start-ups and SMEs) and has been working on promoting interactions between enterprises and R&D centres, so that both actors benefit from advantages, synergies and complementarities between them.
Regarding sustainable development, renewable energies and endogenous resources, in 2015 the production of electricity from renewable sources (geothermal, wind, hydraulic) reached 35 % in the archipelago and 55 % on the largest island, São Miguel, 44 % of which came from geothermal energy. In the years to come the archipelago will continue to invest in innovation, decarbonisation and improving its energy efficiency, thanks to the contribution of electric mobility and storage solutions for emerging technologies.
At the investment level, the opportunities derived of the archipelago's strengths are attractive, especially the existing space infrastructures and developed projects centred on the use of technology and climate studies. These elements reflect the strategic positioning of the Azores as an important link in the huge European and international chain. For example, the European Space Agency's (ESA) satellite monitoring station in Santa Maria, which has carried out monitoring/tracing and Earth observation services since 2009; the Galileo Sensor Station (GSS), in Santa Maria; the Atlantic Network of Geodynamic and Spatial Stations (RAEGE – *Rede Atlântica de Estações Geodinâmicas e Espaciais*) station, also in Santa Maria and the one in Flores (which has just started), both of them integrated into the RAEGE and designed to carry out radio astronomy, geodetics and geophysics studies; the ARM facility in the island of Graciosa, which is an observatory and international platform

for advanced climate studies in the Atlantic; and the I42PT infrasound station in Graciosa, designed to monitor nuclear testing. In this context, the possibility of creating an international centre for research in the Atlantic that would be headquartered in the Azores (AIR Centre) is currently under discussion at international level.

Ameland island, due to its small size, doesn't have an own incubator but works together with the incubators available from the Fryslân region and for energy innovation with the energy incubator (New Energy Coalition) and Hanze Polytechnic Entrance labs on the Groningen university campus in the North of the Netherlands. The network-organization Waddencampus plays a central role in this process. In addition, like on other Dutch Wadden Islands, festivals on Ameland serve as an alternative engine for incubation.

Via the two main festivals on the island, Madnes (sports, culture, nature oriented) and Kunstmaand experiments aimed at later innovation and new venturing take place. For instance, during Kunstmaand, each year more than 100 artists from the Netherlands and abroad show their work on specific locations, situated all over the island. In 2017, "second" nature and waste/natural/circular materials were selected as special theme and inspiration source for the event. By this engagement, the involved artists contribute to sustainable innovation by testing and demonstrating original concepts and approaches, inspiring tourist-visitors and interested other stakeholders such as design and environmental sciences students with their original ideas, concepts and artefacts. Consequently, from the various projects, some first start-ups in the area of energy self-sufficiency and circular economy are emerging.

Vlieland island, due to its small size, doesn't have an own incubator but works together with the incubators available from the Fryslân region and for energy innovation with the energy incubator (New Energy Coalition) and Hanze Polytechnic Entrance labs on the Groningen university campus in the North of the Netherlands. The network-organization Waddencampus plays a central role in this process. In addition, like on other Dutch Wadden Islands, festivals on Ameland serve as an alternative engine for incubation.

The main festival is Into the Great Wide open. Music in nature is central during this festival. There is a limit of 6000 visitors, but they can sell more then 20.000 tickets. During this festival innovation can be tested: d3D printing by the children of Vlieland, no plastic bottles on the Island etc. Consequently, from the various projects, some first start-ups in the area of energy self-sufficiency and circular economy are emerging.

Regarding **Guadeloupe,** half of the companies claim to have innovated between 2008 and 2010. More than 100 million EUR from EU funds have been allocated for innovation between 2014 and 2020. Our main innovation structures are a Pole of competitiveness Cap Energie via Synerg'Îles, 2 clusters (maritile-CEI.BA - Guadeloupe TECH), 1 coworking workspace (The Spot), 2 agricultural technical institutes (IT2 and IKARE) and the RITA network (Innovation and Agricultural

Transfer Networks) that aims to support the local development of animal and plant diversification products in the French overseas departments. Unfortunately, none of these elements are located in our territory (CANBT) but these are for the entire Guadeloupe.

Innovation Policy

In the Islands-of-Innovation group we see a sharp division: most large islands and archipelagos have been involved in the RIS strategy exercises and have clear strategic and operational plans. The smaller islands have not been participating in RIS and have a smaller focus, with Samsoe and Ameland particularly focussing on fossil-fuel free energy systems.

The **Samsoe** municipality has a department for trade and tourism. They work for commerce, tourism, settlers, and culture. They collaborate with the Samsoe Innovation Council, Local Action Groups (LAG), Business Region Aarhus (on the mainland), and the Samsoe Marketing Committee. The Samsoe Energy Academy collaborates with Aalborg University in projects and teaching.
The municipal plan documents the policies that the municipal board has agreed upon. It is written for the citizens and authorities to plan the future activity in specific areas of the island.
Over the years, the innovation initiatives of the **Ameland** municipality have received intensive support both from the Province of Fryslân and the regional “Waddenfund”. This special fund has been established in the Dutch Waddensea region to facilitate regional innovation and is meant as compensation funding for the negative impact of the natural gas drilling in the area.
On its economic agenda, Ameland has developed the vision of a future island in which sustainable development, resilience and an economic growth fitting the island values and identity are cornerstones. As specific challenges are considered: (1) an increase of the resilience of the touristic sector while at the same time reducing the economy’s strong dependence on it; (2) the creation of job opportunities for young adults via diversification of the economy; (3) further greening of the agricultural sector; and (5) aiming at energy- and water-autonomy as well as applying a circular economy model approach.
The activities under the Covenant have positioned Ameland today as a frontrunner within the Energy Transition in the Netherlands. Its living labs experiences are for instance fully recognized and acknowledged by the Dutch Energy Top Sector program. Within Ameland local businesses such as installers have been able to learn from working with the new energy technologies and experiments, thereby adopting new skills and capabilities. In several villages on the island, the so-called village committees are becoming energy transition ambassadors. And, next to the technicalities demonstrated by the Covenant partners, a structural knowledge exchange relationship with the energy transition partners and particularly the Hanze

Polytechnic/Entrance has been elaborated: a good basis for keeping the frontrunner position.
The Municipality considers stimulation and facilitation its main role in the energy transition program. It supports the program financially and indirectly by bringing in support from mainland partners, the Province, the Waddenfund etc. Next to financial support, the Municipality has an active role in education and communication with respect to the program. The type of innovation aimed at is mainly flagship- and territorial innovation, based on the testing of new products and technologies in an island living lab experiment.
For the future, on the islands' energy agenda the top-priority is the ambition of the island to be completely self-sufficient with local renewable energy (following Samsoe's ambition to be energy self-sufficient: Samsoe).
The goal for **Vlieland** mentioned in the government document till 2018 was not realistic. Now the new chosen policy will aim for CO_2 neutral Vlieland in 2020.

In the last 10 years, the **Azores** Regional Government approved two legal regimes for R&D: first, in 2008, the Integrated Plan for Science, Technology and Innovation (PICTI), which aimed to support activities of scientific research, technological development and innovation, as well as to promote the use of ICT; and second, in 2012, the PRO-SCIENTIA, which governed the framework applicable to the entities engaged in scientific research, dissemination of scientific and technological culture, innovation and technological development, and promotion of information and communication technologies. Following the European policy for research and innovation, the Azores developed their research and innovation strategy towards smart specialisation (RIS3). RIS3 guides the priority areas for research and innovation, *i.e.* agriculture and agribusiness, fisheries and sea, and tourism, but also considers other areas and competences where the Azores have international competences: biotechnology, volcanology, geology, renewable energies, and space monitoring.
In the period of 2007-2013, the Azores executed two operational programmes for the promotion of innovation, namely the Operational Programme of the Azores to Convergence (PROCONVERGENCIA) and the Operational Programme of the European Social Fund for the Azores Autonomous Region (PRO-EMPREGO). They were co-funded by the ERDF and ESF, respectively, and were included on the National Strategic Reference Framework (QREN). These two programmes aimed the valorisation of the scientific system, the support to the development of competitiveness, and the qualification and diversification of the labour and enterprises. Moreover, during the same period (2007-2013), two main systems of incentives were created for the development of innovation: i) in 2007, the System of Incentives for the Regional Development of the Azores (SIDER), whose measure 2 of its Subsystem of Support for the Development of Quality and Innovation favoured projects for partnerships between enterprises, between enterprises and R&D institutions, projects for technologically innovative solutions, energy efficiency, and projects that created highly qualified jobs; and ii) in 2012, the System of Incentives

for the Development of the Azorean Handicrafts (SIDART), whose one of its aims was funding projects for the promotion and innovation of artisanal products.
For the period 2014-2020, it was established the Operational Programme for Azores Autonomous Region (AÇORES 2020 OP), which provides funding of investments through ERDF and ESF. One of the priorities of this programme is defined in its axis 1 (research, technological development and innovation), which aims the fulfilment of the RIS3. The main system of incentives for innovation that was created in the scope of this programme was the System of Incentives for Business Competitiveness (COMPETIR+), which aims to promote the sustainable development of the regional economy, strengthen competitiveness, the ability to reach new markets and the internationalization of regional businesses, as well as to expand the economic export base of the Azores.
In addition to the AÇORES 2020 OP, the Cooperation Programme INTERREG V A Spain-Portugal MAC was approved in 2015 by the European Commission, and included a budget of 130 million of euros (85% funded by the EFRD), from which 11.6 million are available to beneficiaries from the Azores Autonomous Region. Strategically, within the two axes "Smart Growth", this operational programme contributes to a strengthened cross-border regional innovation capacity (axis 1) as well as to an increased cooperation of small and medium-sized enterprises and research and development sector across borders (axis 2).
As far as the Operational Programmes in the Azores Region - PROCONVERGENCIA (2007-2013) and Azores 2020 OP (2014-2020) - a very satisfactory level of execution was accomplished for the operations regarding research and innovation. The systems of incentives SIDER and SIDART in the previous Operational Programme (2007-2013), and COMPETIR+ (2014-2020), represent crucial instruments for the support of product, institutional and flagship-oriented innovations.

On **Madeira** the Madeira 14-20 program is the main innovation policy instrument. Madeira 14-20 is built over 12 priority axes that are aligned with the priorities from the European Strategy 2020. The first axe foresees (TO1) the Reinforcement of RTD&I.
A strong focus is on investment priority, particularly on the promotion of the investment on innovation and research companies, on the development of synergies between companies, R&D centres and universities and especially the promotion on developing new products and services. Technology transfer as well as social innovation and applications of public interest are also included. Specific objective: R&D initiatives' development in entrepreneurial context reinforcing the connections between companies and SRDITI (Regional System for the Research Development, Technology and Innovation) and the high education institutions.
Madeira's funding priorities in the past were mostly focussed on new infrastructure (e.g. road, airports, public buildings) and less on innovation policies. In line with the Madeira's smart specialization strategy, this has changed and there is an increasing focus on innovation to address Madeira's actual needs. The challenge now is to also change the strategic vision of politicians, helping them to adapt to this new paradigm

in order to generate successful and effective projects and initiatives under this investment priority. Tourism has been identified as one of the fields with recognised potential in terms of the islands resources but where there is also a significant need for improved innovation policies.
ARDITI, through RIS3, implemented some measures and actions to establish a public policy with respect to SRDITI, aiming to identify and promote the effective management of the existing resources and the qualification of the regional scientific system. This has been done via a development programme that could attract scientific careers and consequently facilitate the development of the critical mass in the identified areas.
Today's reality shows that there are few initiatives regarding these fields because - after a long path of infrastructure focus - it is still difficult for many stakeholders to focus on Innovation instead of infrastructures. Innovation and the awareness of the top decision makers regarding its importance is one of the major challenges that Madeira 14-20 faces: to demonstrate that positive and determinant changes can happen from Innovation in services, products and processes and that it is a transversal challenge, which needs to have a strong presence in the Madeira 14-20 program.
On **Guadeloupe**, the main asset of Guadeloupe for technological innovation lies in the production of knowledge: the region has the largest public research facility in the French overseas territories grouping a university and various national research organizations. The research system is split between about twenty organizations and research laboratories (small teams, except, to a certain extent, for INRA and CIRAD).
The objective is to reinforce the innovation by promoting pole of excellence, more oriented towards the economic and social needs of the territory.
The 1st axis of intervention focuses on the implementation of the tools needed to animate the regional innovation network. The 2nd line of intervention focuses on the promotion of entrepreneurship, the development of new products and services and new forms organizations in Guadeloupean companies. The 3rd area of intervention focuses on the means needed to facilitate and multiply the bridges between companies and the actors of research and training in order to boost the development and diffusion of innovations in Guadeloupean companies. The priority is based on the detection, emergence and support of collaborations involving companies and research and training actors on identified innovative projects. The 4th axis focuses on the increase in research and applied development activities carried out by the research community. The actions included within this axis of intervention address a double challenge: structure scientific and higher education centers into an intra-organism partnership approach in order to constitute visible critical masses and the insertion of research actors in national and European networks. The 5th axis is the development and the reinforcement of skills for innovation.

On **Saaremaa**, Kuressaare was the first city in Estonia to adopt a sustainable development strategy "Kuressaare Agenda 21" in 1997. In 1998, Kuressaare joined

the WHO European Healthy Cities Network and took the leadership in establishing a national Healthy Cities Network in Estonia. In 2002, the Kuressaare Health and Sustainable Development Strategy 2002-2010 was adopted. The strategy established the core and innovative long-term development objectives of the living environment, incl. physical environment, socioeconomic environment and psychosocial environment.

The established objectives were then translated into the Kuressaare Development Plan 2005-2013(2020), further to the Kuressaare Development Plan 2014-2020 (2030) and their action plans. These documents are annually revised and amended.

There has been no separate innovation strategy document produced in the city, rather the innovation aspects have been included in the city development plan that is a statutory document according to the Local Government Organisation Act. Thus, the Kuressaare Development Plan has a twofold function, being a policy (incl. innovation) document and implementation instrument.

Kuressaare City Development Plan 2014-2020 (2030) states the development objectives, covering a comprehensive range of aspects of the living environment in the city, including Management and Cooperation, Education, Culture and Sports, Social Protection, Economy, Urban Environment. Development priorities are: to secure the city sustainability, to value the living environment, to develop a safe and open city, to strengthen the solidarity of the community, to develop economy based on regional specifics.

The chapter on the Economy sets the tasks of reaching a favourable investment and business environment with support to businesses by the KCG which includes implementing the value chain idea in the business key sectors and increased number of jobs. As for activities, the Development Plan identifies support to the providers of new services/products, support to product development, and provision of information to new beginning entrepreneurs.

In order to improve the efficiency of the Development Plan, it is considered essential to identify and implement a clear and detailed action plan at operational level for mitigating the most severe problem of the young and working-age people leaving the city and the island. It is stated in general that the application of regional natural and historic cultural resources is important but an action plan in this regard needs to be identified. This is in line with Estonian Structural Funds Operational Programme, especially with Priority axes 4. Growth capable entrepreneurship and R&D.

The overall weak innovation performance of the **North Aegean** region can be understood when considering the current composition of the regional innovation system. The regional economic structure is dominated by the service sector (notably tourism) and the agro-food sector, which is traditionally a sector in which internal R&D expenditure is low. At the same time, the business sector is faced by the challenges posed by insularity and small and fragmented scale of sectors. Whilst the higher education research sector has developed over the last decade through the consolidation of the activities of the University of Aegean, the interactions with local business remain limited, even if certain departments such as environmental sciences have been involved in past initiatives.

The very low levels of business R&D in official statistics do not mean that there is no innovation occurring, rather, innovation in such sectors is often incremental, based on application of technologies or of a non-technological (marketing, design, etc.) nature. The focus of 'bottom-up' efforts over the last decade within the islands has been to try and leverage the rich, but increasingly threatened, biodiversity of the island in the form of products or services based on the natural environment. However, such efforts to support regional enterprises to innovate within a 'green growth agenda' have been at the margin rather than the core of Structural Fund interventions. Similarly, despite the relevance of ICT as an enabling technology and as a mean of reducing the isolation of regional enterprises from national and global markets, there has been no significant effort to improve ICT uptake in the business sector.
The North Aegean region has limited business and scientific capacity but is characterized at the same time by a rich and diverse cultural and environmental diversity. The islands' economy is heavily dependent on public sector funds.
There is a clear logic in building on and extending past efforts to 'brand' the islands as 'sustainable' and to implement innovative solutions to tackle insularity and protect biodiversity while exploiting the potential for new higher added value products and (tourism) services based on the natural environment.
The region, like a majority of other Greek regions, has a potential comparative advantage in focusing future research and innovation actions co-financed by the ERDF on maximising the potential of the 'bio-economy'.

Innovation Challenges and Ideas

Many problems on the involved islands are similar, like on an ageing population, decreasing job and education possibilities, a dominant tourism sector with a high percentage micro-companies not active in innovation etc. This means that part of the innovation policies and plans are focussing on the same issues and opportunities. But each island also has specific unique characteristic and an own prior history with respect to innovation, the yes/no participation in RIS, the existence of a university with an international research program or not. Small islands cannot permit themselves to have large higher education and incubator programs, have only limited funds of their own so are forced to cooperate with the higher governance levels if they want to fulfil their ambitions, have to specialize etc. It means that each island also has specific goals and foci for the further development of advanced innovation policies and policy instrument mixes.
Also, each island has its own unique position on the innovation ladder.

The island of **Saaremaa** is currently in a unique situation as in the course of the ongoing administrative reform local governments are in the process of amalgamation.
In the new situation of Kuressaare City→Saaremaa Municipality, a new Development Plan and Action Plan to it, covering the territory, living environment and population of the whole island will be developed. The main challenge and focus is identifying innovative measures to support and facilitate the young people in

particular settling on the island (not leaving the island) and creating jobs. The emphasis is on social innovation, by bringing together the public, private and non-profit sectors and voluntary community contribution in most meaningful and efficient ways.

On **Madeira** Tourism and culture are relevant strategic areas defined by RIS3. Among the goals, the reinforcement of the participation in R&D international networks that can contribute to the development of Tourism in Madeira are considered essential.

The region has a great potential for development in these areas but the Tourism industry needs to improve itself in what concerns of innovation capacity.

In general terms a mindset change is strongly needed. R&D involvment in tourism is still limited and its importance is not fully seen and accepted. Top decision makers are still much connected with the –previous- infrastructure era and need to embrace the new innovation challenges and aknowledge its real potencial.

On the **Azores**, during the next years (until 2020), the innovation policy will be developed to support measures centred in the following: i) consolidation of the scientific and technological potential of the Azores; ii) research in relevant areas of the regional economic activity (traditional and emerging sectors); iii) encouraging cooperation through the creation of trans-regional and international synergies; and iv) to valorise scientific dissemination and experimental teaching.

Regarding **North of Basse-Terre** (part of Guadeloupe), as a rural area, we aim to focus more on tourism and agriculture. As highlighted in the regional S3, there is a need to first address the relevant structures that would allow new projects and opportunities for cooperation between businesses and knowledge stakeholders to emerge. CANBT will work on providing such structures, such as building up a sustainable business incubator for which also the experience and good practices of the other partners can be used. This will help to enhance the innovation capacity in the agricultural sector (and where relevant, beyond) to make use of the islands potential. To allow building new partnerships between businesses and knowledge stakeholders, also wider target audiences need to be addressed to help building a new mindset.

On **Ameland,** as specific challenges are considered: innovation of the tourism sector and diversification of the economy. The ambition to become a self-sufficient island with respect to sustainable energy, water (later food, transport) and to aim at a circular island economy are the main innovation challenges, which can help to achieve the first two goals mentioned

For **Samsoe** the challenges are to (1) no longer use fossil fuels and propellants on the island; (2) to run all transport on and from/to Samsoe on renewable energy; and (3) to extend and establish partnerships between energy consumers, research labs, distributors and sustainable energy producers. Underlying is the vision to increase the population while at the same time reducing the use of fossil based fuels.

Continuously on the island, innovation needs are identified in the mentioned areas leading to new, concrete projects. Improvement of innovation policy and the innovation chain is necessary because actions there provide high potential not only

to help Samsoe to become entirely fossil fuel free but also to secure more jobs on the island and to make the island more attractive to settlers. If the number of jobs increase, then the population will increase, and then the need for housing will increase. Due to limited space and the environment, trade-offs are necessary.[1]

The Regional Authority of **North Aegean**, is responsible for the planning and Management of the Regional Development Programme of North Aegean during the EU Programming periods, 2000-2006, 2007-2013, 2014-2020. It is also responsible for the planning, specialization and implementation of the Regions RIS3 policies. Previous experience in other EU Programs includes: In the previous (2000-6) and current (2007-13) period, the regional development planning process was top-down and involved organisations predominantly from the public domain. Indeed, research, innovation and digital agenda policies were amongst the most centralized as they were designed and implemented at national level. In many cases, the regional authorities were not informed about R&I actions funded by resources from the ROP but implemented through national calls. Only a few research and innovation actions have been designed and implemented by in a bottom up way by the regional partners, such as the two Regional Innovative Actions Programmes, NAIAS and Biobus, co-financed by the ERDF during 2000-06. In addition, the Regional Fund10 has participated to a number of Interreg, FP and CIP projects. A central theme of these projects has been sustainable development, both in terms of maximising the potential of and protecting the islands' biodiversity.

The Regional Operational Program (ROP) North Aegean refers to the Strategy for Smart Innovation. This strategy is further developed within RIS3 document 2014-2020, where the aim is to promote innovation and entrepreneurship, within the context of the following priority sectors: 1. Agrofood 2. Tourism and Culture 3. E-economy.

RIS3 defines the frame for investment in innovation in North Aegean through entrepreneurial discovery.

More specifically, the following challenges are mentioned:

This Primary Sector represents a significant share of the regional economic activity, with growth potential if combined with ICT tools. It is envisaged that Agriculture, fishing, and aquaculture enterprises need modern control, administration, monitoring, and marketing and logistics tools. Moreover, added value bio-agricultural and alternative agriculture producers can benefit from Internet in their marketplace participation, optimize branding, etc. Farmers could also be supported to optimize their production activity, employing monitoring tools, especially in reducing the cost of energy by using alternative sources. Along this line, recently in ROP 2014-20 an innovative project «Industrial and Research and Applications Development Center for Mastica", was approved to be funded with 2,5 mi Euros.

[1] Jantzen, J., Kristensen, M. and Christensen, T. H. 'Sociotechnical Transition to Smart Energy: The Case of Samso 1997-2030', *Energy*, (Special issue (in print)).

.

With respect to the Tourism and Culture sector, the region hosts many archaeological and religious sites, that attract large numbers of visitors. For this reason, the involved SMEs should be motivated to exploit modern technology and synergies to depict the beauties of the region, minimise management and advertising costs, and as a result extend the tourist season and create more jobs.
The SMEs in the Food & Beverages sector can improve their profit margins through branding and advertising, with modern e-commerce platforms.
Finally, to improve the availability of affordable broadband connections for households is a major European target. The North Aegean region should undertake all possible national- and EU level actions, to further extend broadband in the region, giving emphasis on the smaller islands.
Innovative entrepreneurial activities in the North Aegean are in an evolutionary phase. What is missing is the business risk. Also, the factor of funding is clearly of the utmost importance. With proper funding and the necessary business risk, investing correctly and with more confidence in innovative management and marketing, the current North Aegean business eco-infrastructure and open innovation program could advance tremendously.

References (see Annex**)**:

- Annex I Islands Profile
- See also separate Part II ANNEXES: Individual Island Reports

ANNEX I Islands Profile

Profiles prepared based on information submitted by partners.

	Azores (Autonomous region, Portugal)	**Saaremaa (Estonia)**	**North Aegean (Greece)**	**Madeira (Portugal)**	**Samsoe (Denmark)**	**Ameland (Fryslân/the Netherlands)**	**Vlieland (Fryslân/the Netherlands)**	**CANBT/ Guadeloupe (France)**
Size (land), km^2	2322	2 673	3836	801	114	58,83	36,13	1628
Island(s) and approximate description of location	9 islands	1 main island	9 islands make up the North Aegan region. It is located north - east of mainland Greece. Distance from regional centre in Lesvos to Athens – 240 km	1 main island	1 island, 124 km from Copenhagen	1 island, 133 km from Amsterdam	1 island, 98 km from Amsterdam	2 main islands. Outermost region of France, located in the Caribbean. CANBT a part of the island of Basse-Terre
Population	246 772	31 210	199 231	255 000	3724	3591	1149	78 920 CANBT and 397 990 for Guadeloupe
Population trends (app. last 10 years)	Decreasing	Decreasing	Decreasing (data 2001-2011)	Decreasing (2006-2016)[2]	Decreasing (by 1% per year, then stagnation since 2015	Slight increase	Slight increase	Decreasing (5% less between 2010 and 2015 Rapport annuel IEDOM

[2] https://estatistica.madeira.gov.pt/en/download-now-3/social-gb/popcondsoc-gb/demografia-gb/demografia-noticias-gb/1274-16-06-2017-population-of-the-autonomous-region-of-madeira-maintained-downward-trend-in-2016-but-the-decline-was-less-pronounced-than-in-2015.html

	Azores (Autonomous region, Portugal)	Saaremaa (Estonia)	North Aegean (Greece)	Madeira (Portugal)	Samsoe (Denmark)	Ameland (Fryslân/the Netherlands)	Vlieland (Fryslân/the Netherlands)	CANBT/ Guadeloupe (France)
					("hockey stick" shape)			2017)
Population density per square km	106.30	11.70	52	308.5	32,7	61	32	169
Unemployment rate	10.00%	3.6%	21.90%	11%	2%	5.3%	1.6%	24%
Population in age group 15-29 (proportion)	21,53%	18%	18%	18%	9,7%	12%	13,5%	16,90%
GDP per capita growth %	0.00 (2010-2014)	18% (2010-2015, overall Estonia figure)	-2,31 (2010-2014)	/+2% in 2014 /-0,1% in 2015	1,42% (regional data)	1,92 (regional data)	1,92 (regional data)	2,20%
European Innovation scoreboard http://ec.europa.eu/docsroom/documents/23932	Moderate innovator	Moderate	Moderate innovator	Moderate innovator	Innovation leader	Innovation leader	Innovation leader	Innovation leader
Regional Innovation scoreboard https://ec.europa.eu/growth/industry/innovation/facts-figures/regional_en	Modest + innovator	Moderate innovator	Modest + innovator	Modest -innovator Regional scoreboard: -0.12 in 2010-2014	Innovation leader (Midtjylland region)	Strong – Innovator (Fryslan region)	Strong – Innovator (Fryslan region)	No data

	Azores (Autonomous region, Portugal)	Saaremaa (Estonia)	North Aegean (Greece)	Madeira (Portugal)	Samsoe (Denmark)	Ameland (Fryslân/the Netherlands)	Vlieland (Fryslân/the Netherlands)	CANBT/ Guadeloupe (France)
GDP per capita (EU-28, in PPS)	69,2 % in PPS or 15 383 EUR	18100 EUR	15 300 EUR	20 200 (regional scoreboard) 74.3% of EU 28 (PPS)	31 000 EUR	25 900 in region (Fryslan)	25 900 in region (Fryslan)	21 012 EUR
Number of active enterprises	25917	3067	4365	23662	358	822	336	4139
Tertiary education attainment	14	28	14	14.80 % (national data)	21%	Not available	Not available	18,7% (source rapport IEDOM 2017 p121, INSEE)
Enterprises per population –self-defined indicator)	0,10	0,10	0,02	0,09	0,10	0.23	0.156	0,01
University or its equivalent (college, affiliate on the island)	Yes	Yes	Yes	Yes	No	No	No	Yes

	Azores (Autonomous region, Portugal)	**Saaremaa (Estonia)**	**North Aegean (Greece)**	**Madeira (Portugal)**	**Samsoe (Denmark)**	**Ameland (Fryslân/the Netherlands)**	**Vlieland (Fryslân/the Netherlands)**	**CANBT/ Guadeloupe (France)**
Main economic sectors	Services 75,1% (public administration 29,7%traditiona l trade 23,6%); Agriculture and fishing (9,6%)	Agriculture forestry fisheries 25% Trade 11% Construction 9% Professional, scientific and technical activities 9% Manufacturing 9% Accommodation & food 7%	Wholesale & Trade Agriculture, Forestry and Fishing Hotels & Restaurants	Tourism 30%; Other services 55%	Tourism 18% Agriculture 13% Trade and transport 26% Public administration, education, and health 32%	Tourism & Recreation	Tourism & Recreation	Non-commercial tertiary sector (incl.public administration) – 48%, commercial tertiary, including tourism – 37%, industry (6,5%), agriculture (2,5%) and construction (5,5%)
Main innovation focus	Agriculture `& Agri-business; Fisheries & Sea, Tourism	Testbed for innovation; support system for settling on the island	1 agro food 2 tourism & culture 3 E-economy	Testbed for innovation; ict; Resour-ces and Technologies of the Sea; Tourism	Testbed for innovation; agriculture; tourism; renewable energy	Testbed for innovation; Energy; Water; Circular Economy	Testbed for Innovation, Tourism, Agriculture, Liveability.	Agriculture (with focus of more diversification of products) Tourism, Culture

ANNEX II Individual Island Reports

(See separate files (reports) per island(s))

Interreg Europe
provinsje fryslân
provincie fryslân
European Union
European Regional
Development Fund