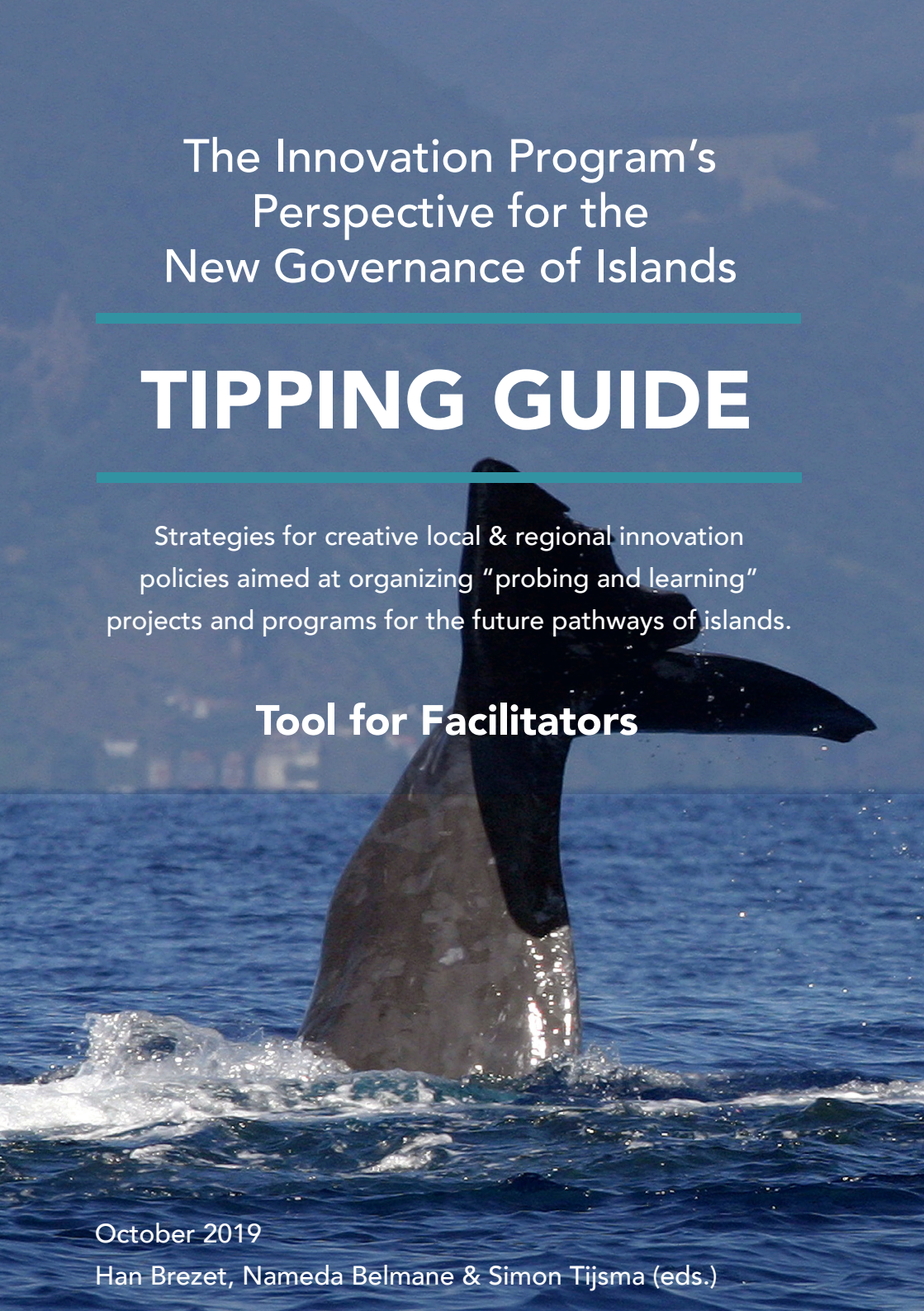

The Innovation Program's Perspective for the New Governance of Islands

TIPPING GUIDE

Strategies for creative local & regional innovation policies aimed at organizing "probing and learning" projects and programs for the future pathways of islands.

Tool for Facilitators

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PREFACE

The social appropriation of knowledge calls today upon all of our societies. There is no social development or economic growth without the social support base of education, science and culture being strengthened and broadened. This is everywhere because recruitment for knowledge is only possible through a renewed process of trust and interest on the part of new generations.

Sharing the thirst for knowledge with others and making it the difficult and permanent path of experience, has been the main role of innovators, which we must continue to strengthen. Their role in fostering institutional cooperation to stimulate the exchange of ideas in alignment with national and regional priorities is becoming more relevant than ever in order to face three main global challenges, as follows:

Climate change, including the need to foster a better compromise between economic development and the preservation of our common ecosystems through informed management mechanisms;

Digital transformation, including the massification of ubiquitous connectivity, artificial Intelligence, big data analytics and advanced computing, together with data science and the need to foster digital skills for all;

Income inequalities, and population dynamics, including the need to better considering knowledge for inclusive economic growth and establishing better quality of life in a rapidly changing human-earth system, effectively considering aging, changing birth rates and migratory flows.

It is under this context that the need for experimentation, integration and dialogue between different scientific areas must be pursued and reinforced, as the complex problems we face require the pooling of knowledge from the various sciences - from engineering, life, the humanities and social sciences.

Thus we see the social phenomenon of emerging public risks, notably in association with climate change and its impact on the quality of life of our populations, as a tremendous opportunity for motivation for knowledge and for the civic participation of all in the diffusion of knowledge. It is clearly a tremendous opportunity for the desire to know and for experiments with new ways of community involvement. These may include the redefinition of community-based systems for blue economic development, attracting and empowering youth and new communities in local and regional development of sustainable societies.

It is under this context that universal design thinking, meaning an open, co-designed science and knowledge-based approach is necessary at various societal levels. Islands, in many aspects our 'sensors of the future', can adopt a special position, by either offering testbeds for the new systems and social experiments or creating unique own solutions, based on their relative isolation.

Along this line, I consider the Islands of Innovation project outcomes, with its transition oriented dancefloor model and the Tipping Guide, excellent examples of social engagement and governance instruments that can help communities and regions to create their own, original but co-designed contributions to the challenges ahead, taking resiliency and best or next practices into account.

Manuel Heitor
Minister for Science, Technology and Higher Education, Portugal

We dedicate this guide to all islanders, particularly to those who through their hard work, dedication and experience with -isolation based- resilience are aiming to contribute to the sustainable development goals (UN-SDGs) of their communities, via innovation and innovative approaches. With the TIPPING Approach we hope to offer island communities -unique qua geographical position, nature, economy and island culture- a supportive tool, leading to -a variety of- "dancefloors" as unorthodox starting points for challenging and unique joint innovation projects. Moreover, we hope to seduce both local and regional governments to pro-actively organize the dancefloor, facilitate the dancing stakeholders and be one of them, with special responsibilities to realise as a result -governance based- action plans for innovation.

Table of Contents

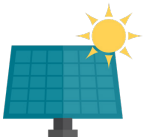
1 Introduction

The TIPPING Approach and Wheel have been designed in the framework of the EU Interreg Islands of Innovation project. Its aim is to be used as a tool for improving innovation policy or governance.

The TIPPING Wheel can be used for the assessment of an islands' innovation policy aimed at:

- An overall benchmark between islands or parts of an island;
- Comparison between the status quo and a desired future: 'the dream';
- A challenge, sector, or aspect benchmark (energy, materials, water, transport, agriculture, circular economy, tourism, emerging technology sectors, etc.);
- The creation of a basis and inspiration for a comprehensive new -or to be renewed- policy program with a special thematic focus and engaging-oriented projects;
- Functioning as a supportive tool for policy innovation brainstorms.

Innovations in the wheel can be:



(a) realized ones to learn from

(b) starting projects on novel issues

(c) future dreams/ ambitions.

Many definitions of innovation do exist. They vary from specific technological novums to broad societal changes. Here we follow Celik (2018) and refer to innovation as a new social-cultural practice, including possible technical and economic changes, aimed at realizing one or more of the 17 UN Sustainable Development Goals (UN, 2017). The innovative practice can adopt various shapes, like a new technique or technical process, a new service, a new market, a new business, a new socio-technical system, or a combination of these concepts. With respect to the notion "policy" we assume a broad concept, better expressed by the notion "governance", which stipulates the insight that usually government policies include/ require cooperation, sharing, and partnerships with other actors and stakeholders in society, such as industry, other governments, inhabitants, service users (various consumers), knowledge institutes, NGOs, etc.

TIPPING as creative tool strives to contribute to governance innovation on islands and similar (more or less) isolated areas following the Islands of Innovation Model. This model has been developed to define the common issues and methodology for all partners in the EU Islands of Innovation project. It is to be used in regional action plan development.

Figure 1 - Islands of Innovation Model

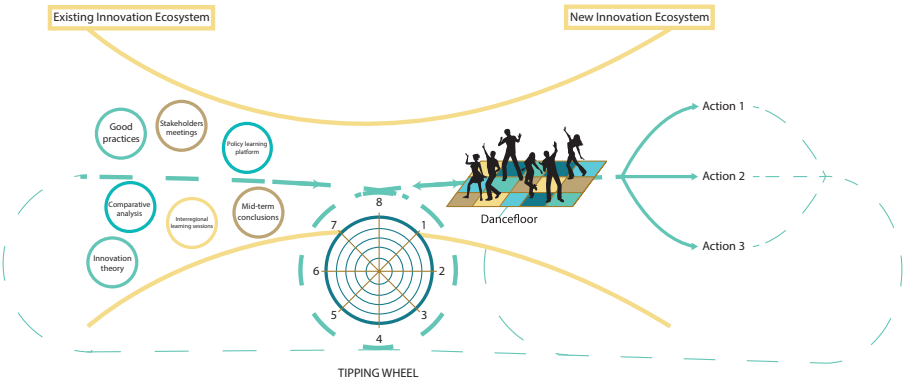


Figure 1 shows the Islands of Innovation Model used in the project, with the following elements: (1) the existing innovation ecosystem; (2) the TIPPING Wheel as a creative guiding tool to develop innovative policy strategy mixes, resulting in (3) a new, or improved innovation ecosystem or the "dance floor" where improved elements of innovation policy bring actors and stakeholders together, from where the new projects, products, business ideas, models and services may emerge.

TIPPING finds its roots in the EU EFRD program: European Fund for Regional Development, which aims at the stimulation of innovation in peripherical European regions, to create new competences, business and jobs. The approach is aligned with the vision of Prof. Mariana Mazzucato, main advisor to the European Commission, acknowledging a crucial guiding role for governments in societal relevant innovation (Mazzucato, 2018). In the practice of local and regional governments this translates into avoiding 'traditional innovation policies', typically consisting of project hopping, picking winners, standard mixes of R&D funding and regulation/ legislation, as well as a sectoral and directive approach. Instead, 'modern governance approaches' involve a 'dream' or challenging mission, build up cumulative knowledge and learn and probe via a programmatic approach, engage with 'willers' and -via reflective practice- develop an evolving policy instrument mix and innovation infrastructure.

With respect to the role of business, TIPPING builds on the theories and conceptual frameworks of open innovation (Chesbrough, 2006), effectuation (Sarasvathy, 2001. Keskin, 2015), creative industry (Florida, 2012), and regional innovation (Boschma & Martin, 2010).

This TIPPING Guide for facilitators follows a step-by-step approach, in which TIPPING Wheel workshops are the central elements.

2 Preparation

Follow these steps to use the TIPPING Wheel:

2.1 Select the subject: municipality; region; branch; sector; issue; challenge; dream. Your Regional Innovation Strategy (RIS = Smart Specialization Strategy of a certain Region in the EU) analysis or similar analysis can be a good starting point for setting priorities = selection of challenges = formulation of a positive dream, which attracts support from stakeholders and population;

2.2 Plan preliminary interviews with the municipality and other local stakeholders;

2.3 Start a literature search that includes: official documents, web search, grey literature and informal sources;

2.4 If -extra- time and resources allow: compare the innovation ecosystem of your island with that of other islands, hold preliminary stakeholder meetings, gather good practices, and in the case of archipelagos, organize interregional learning sessions. Make a summary report of these -extra- activities.

2.5 Add your information to the 8 strategies of the TIPPING Wheel -see Chapter 4- as additional or specific benchmark options and/or questions/discussion issues;

2.6 Prepare the workshop with a team of selected Islands of Innovation facilitators;

2.7 Assess the level of innovation willingness of the municipality/region: if there is a basic level of willingness to get engaged in (1) open innovation with entrepreneurs; (2) instruments and projects' probing and learning; and (3) a facilitating government role is observed, go on. If not, stop the TIPPING facilitating process here.

3 Background Report

Use this scheme to record the background information and sources:

Name of project/subject:

Date:

Place:

Facilitation team:

Number of workshop/interview participants:

Name:

Affiliation:

Consulted literature/information:

I Official documents (policy reports, websites, other official sources, etc.)

II Grey literature

III Information from islands (benchmark of competition)

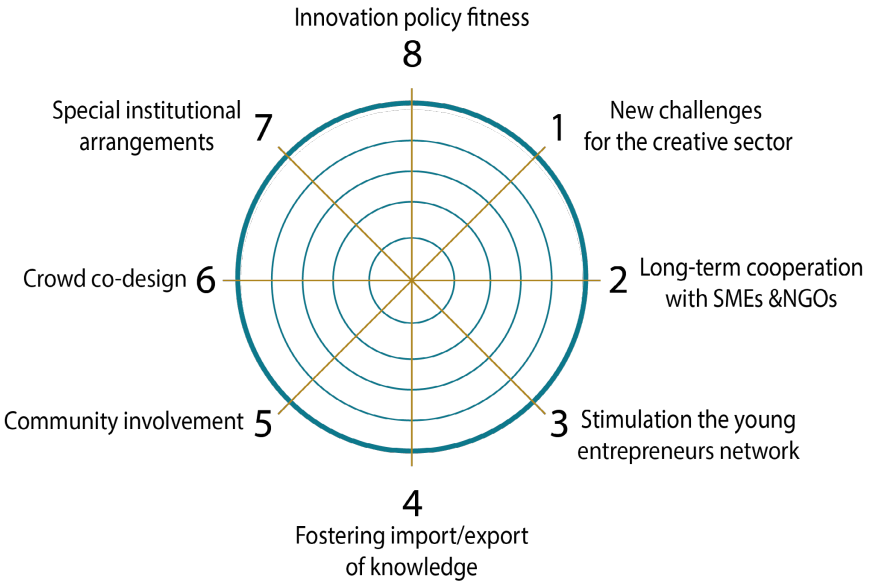
IV Information from islands (personal contacts, etc.)

Build a TIPPING Documents File per case/workshop item, including the results of the preliminary interviews and the literature sources. Use the file as input for the workshop, either during your introduction presentation or during the group sessions. Prepare a presentation on Islands of Innovation and the TIPPING Approach.

4 TIPPING Wheel

The wheel contains eight main strategies, which can be used to create and add to the innovation policy mix on islands.

Figure 2 - TIPPING Wheel



The existing or future policy mix options can also be a combination of the strategies used in the TIPPING Wheel. To work with the TIPPING Wheel, choose the ones that are most relevant to the context.

OVERVIEW OF STRATEGIES

Strategy 1
Working with the Creative Sector

Strategy 2
Long-term Cooperation with SMEs and NGOs

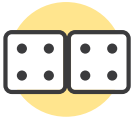
Strategy 3
Stimulating the Network of Young Entrepreneurs

Strategy 4
Foster the Import and Export of Knowledge

Strategy 5
Community Involvement

Strategy 6
Crowd Co-Design

Strategy 7
Special Institutional Arrangements



Strategy 8
Innovation Policy Fitness

5 TIPPING Workshop

Once your homework on the case has been done and your introduction presentation is ready, you can start planning a 1-2-day workshop. Usually, you will organize this in close cooperation with the municipality and the other stakeholders involved in the innovation challenge.

Each 'spoke' of the TIPPING Wheel will be discussed in small groups.

Via the self-assessment questions and scores at the end of each TIPPING strategy, you can ask participants to fill in and discuss their scores for the innovation policy achievement to date and the desired achievement over a number of years. Here, each group can also list their project ideas. As a guide, we advise you to formulate ideas in such a way that the involved policy makers and 'effectuators' are able to formulate 1A4 per proposal within a period of one month after the workshop.

In small groups of participants (5-10 persons), all strategies can be discussed collectively. Experience shows that for larger groups, its more efficient to split the -large- group into subgroups which all handle a smaller number (1-4) of the TIPPING strategies. The outcomes of all groups are presented by the rapporteurs and discussed in a plenary meeting. For further elaboration, it is advised to nominate one or two plenary rapporteurs, who make notes and deliver these after the meeting to the envisaged authors or facilitating TIPPING team, responsible for the workshop end report.

Discuss each strategy, and score:

- The achievements as of today's situation
- The ambition for future next practices

Discuss and note (record) argumentation per score. Challenge the participants with the options/next practices. In addition: try to formulate own, extra options and stimulating examples! Add these to your TIPPING Documents File, to be also used in next innovation events.

6 Inspiration per Strategy

STRATEGY 1 WORKING WITH THE CREATIVE SECTOR

With the rise of the creative industry, the opportunities for local governments to cooperate with the different actors from this sector have tremendously increased. In the past the creative minds of the arts and crafts people could challenge the policy makers to do things differently and think out-of-the box. Now also industrial designers, architects, graphical designers, communication and media developers, digital designers etc. are considered to be powerful partners for local and regional innovation. In terms of innovation diffusion, they are often the ones who are the "early adopters" by realizing the first applications of emerging and new technologies, in the shape of novel products and services, in the context of an island. They are also the ones that often create successful new products and services by user involvement and value creation based upon existing or slightly modified existing technologies, in the context of sustainable development. Such examples can inspire visitors from the mainland to import such technologies and applications for their own use and situation.

Island government pro-active policies can include the support of festivals, expositions, events etc. where local artists, the arts and crafts demonstrate and discuss the potential of these new technologies for and with tourist and professional visitors to their island. Not only new technologies, but also the realization of new societal concepts, like islands' water- and energy-self-sufficiency systems, can profit from the often original visions, comments and practical contributions from the creative class living and/or working on islands.

To emphasize the relevance of the creative industry –presented here as "broad based design"- for economic development, we cite the European Design Innovation Initiative (2012):

> "It is acknowledged that non-technological innovation, including design, (of products, processes and services), as well as culture-based creativity, are important tools for competitiveness and growth in order to improve the quality of life for the citizens of Europe (p. 19)." and;
>
> "Whilst technology-driven innovation has been a fundamental contributor to the prosperity of Europe, the recognition is emerging that design-driven, non-technological innovation is now also a route to competitiveness. The economic significance of design is based on its potential as an enabler to create reliable, desirable, user-driven products and services that are ecologically and economically responsible (p. 46)."

Island governments have several options to stimulate and facilitate the creative industry potential on their island. We recommend the following ones:

1A Stimulate Experiments with New Technologies and New Societal Concepts

1B Stimulate the Development of Creatives' New Products and Ventures

1C Stimulate New Markets for/with the Creative Industry, including Own Procurement

a. Stimulate Experiments with New Technologies and New Societal Concepts

With so many new technologies emerging, creative industry actors can be facilitated to find new applications for these technologies. Particularly, we are thinking of technologies, which can be applied on a small-scale level, such as:

3D printing;

Modernized production technologies aimed at textile fabrication and fashion;

Bio-based materials, both from land and sea;

Sustainable energy technologies;

Digital design and game technology, etc.

Likewise, the creative industry can be invited and stimulated to take the lead in societal challenges on islands, like:

Waste prevention, resources efficiency and circular economy;

Turning plastic waste into valuable artifacts and art;

Helping solve disputes between agriculture and nature with creative solutions, etc.

Image 1 - School children using a 3D printer at Lab Vlieland

3D PRINTING LAB VLIELAND

Digital production technology is now at the forefront of all design and production techniques. 3D printing technology is widely available for domestic use, but there is little guidance for beginners on how to use it effectively and recognize the potential it presents. In 2012, 3D printing was demonstrated at a public festival on the island of Vlieland (NL). Fascinated by this technology and its potential, and with the encouragement of the Province of Fryslan, the initiators developed an EU-partnership to work with other countries to bring 3D-printer-thinking and -making into schools. This produced a first set of lesson-plans using 3D technologies in the subject curriculum for the age range 9-16 and guidance for teachers. Significant interest arose in the province and across the partnership. Now, Lab Vlieland requires extensive trials and testing to produce better lesson plans and guidance for a wider age range. They aim to provide new significant professional resources to help teachers become competent and confident in 3D-printing-thinking and-making. This includes using 3D technologies, recognizing the potential for enhancing the curriculum and motivating pupils, and demonstrating how to integrate 3D-technology across the curriculum.

Source: Lab Vlieland (labvlieland.nl)

b. Stimulate the Development of Creatives' New Products and Ventures

Directly or indirectly, island governments can stimulate their creative industries (arts and crafts, product designers, architects, communication and media designers, service and app developers, etc.) to develop new, sustainable concepts based upon local conditions and strengths. With an emerging tourism market on many islands, new products based on local -not yet fully explored- materials for instance, can create interesting new product-market combinations, that tourists love to buy. Such local materials could be produced through new applications of known natural resources, like cork (isolation), shells (building material), wool (isolation) and grain (local food, local beer).

They are also valuable for completely new products and ventures with new sources of inspiration, like the use of seaweed for food and cosmetics or the use of salty water areas for the growth of high-quality salty food plants. Likewise, algae from the sea are now used as building blocks for the small-scale production of bio-based materials, applied in furniture, house building, etc. (Source: Studio Veenhoven, 2017. Amaral, 2019). The local government can support the on-island creative community in their discovery of such new options. Not only with the establishment of new creative businesses and alliances on the island but also by actively mobilizing their policy network on the mainland and EU-wide.

VLIELAND'S OWN NATURAL BEER

As of winter 2019, the island of Vlieland (Fryslan, The Netherlands) has its own brewery called Fortuna Vlieland. They use a "brewing with the seasons approach", which integrates local ingredients that can be found within walking distance at various times of the year. Using Vlieland's own high-quality natural dune water, unique flavorings such as sea buckthorn, cranberry, rosehip and yarrow, are brewed into various Fortuna beers like their Duin Blond, Island Ale, and Wad Donker. With special permission by the local nature governance organization, "Staatsbosbeheer", the brewery was tastefully integrated into the dunes of a protected nature area. The building is designed in an environmentally friendly way and can barely be seen from the shore.

Upon the roof, 144 solar panels generate 47,500 kWh per year, which is more than sufficient to power the brewery and all its operations. There is a small theatre upstairs where film productions and performances are hosted. A substantial regional grant from the "Waddenfonds", and support from many local organizations, has helped island-based entrepreneur Bojan Bajic, together with colleagues from the Frisian mainland, develop unique local products and culture experiences that make the island more self-sufficient and appealing for residents and visitors alike.

Source: Fortuna Vlieland (fortunavlieland.nl)

Image 2 - Official opening of the Fortuna Vlieland island brewery

Image 2 - Cereal Games office in the Azores

CEREAL GAMES

Cereal Games is a technology development company based in the Azores. Their main goal (and core activity) is the digital development of "serious games", i.e. interactive games structured according to the principles of entertainment, but for educational and/or informative purposes (e.g. educational games, advergames and health games). In parallel, this company also aims to present scientifically proven solutions, so that product users can have real entertainment and education simultaneously. With strategic partnerships with the University of the Azores and IT companies, Cereal Games has developed into a strong research-based game developer. The company has published dissertations, posters and communications about digital game-based learning, health games, and exergames. Moreover, through an acceleration programme, the local government is supporting the company to develop its business within the internet of the future and, consequently, to greatly improve its competitiveness.

Source: cerealgames.net

c. Stimulate New Markets for/with the Creative Industry, including Own Procurement

Island governments can stimulate new markets for new services offered on-island by local producers. For instance, local biologically responsible food from innovative suppliers can be offered at events or for daily use in the municipality cantinas and local municipal institutions, such as schools, etc. Also, the municipality could be among the first to become a client at an island cooperative or agency that supplies sustainable energy (the local energy company). More indirectly, island governments could support promotion of the "export" of such products and services to the mainland. This can be done by promotion via the website, the tourist office, and other channels like billboards on the ferry boats.

PODIUM VLIELAND

The Municipality of Vlieland Island (NL) promotes the young island entrepreneurs of Podium Vlieland, which brings a series of unique film and art festivals to the island.

Source: podiumvlieland.nl

Image 3 - Podium Vlieland film and arts festival

MARCA AÇORES

The Azores, its territory and culture have multiple shapes and expressions, thus, the Regional Government decided to value this territorial identification by creating Marca Açores. It is a strategy and a brand that stands for quality, throughout the entirety of the regional productions. It enables the local products to stand out through the most characteristic traits of the Azores – nature, high environmental value, natural diversity and exclusivity. This is of undeniable importance for success in accessing and securing markets, aiming to contribute to the added value of Azorean products and services and to foster exportation. Marca Açores is now one of the major driving forces in promoting the region internally and externally.

This strategy defines a consistent path through the creation of a visual identity and signature, which ensures that the place of origin of the products and services is the Azores. This stimulates the pre-existing preference for the consumption of Azorean products, while contributing to production growth and ensuring structural conditions to regional enterprises to progress in the value chain, increase their competitiveness, status and promote job creation and wealth.

Marca Açores may be used by all entities that contribute to the valorization of the territory, to attract investment, to increase exports, with a brand architecture that allows for the distinction of different areas of business in a logic of coherence and visibility. Marca Açores promotes awareness campaigns throughout the value chain with the goal of further valorizing the products and marketing campaigns in strategic markets.

Marca Açores can be used on its own or in combination with other brands and assumes two main dimensions: a brand that guarantees the belonging to the region and to its patrimony, and a seal of origin for its products and services.

The entities that wish to join Marca Açores, or those that wish to use it, must ensure full compliance with the access conditions set for that purpose. These are established in regulations and specific guidebooks thus guaranteeing a standard of quality of the regional product/service.
The users of Marca Açores are granted by its managing entity access to different services and synergies.

Amongst the benefits and advantages of joining Marca Açores are the possibility of benefiting from communication and marketing campaigns of the initiative, put in place by the managing entity, departments of the Azores Government and other partner entities; the straightforward and immediate recognition by consumers of the product's regional origin and regional incorporation, fostering preference for the consumption of Azorean products; the increased demand for goods that contribute, in a more noticeable manner, to creating value in the Azores, thus promoting the competitiveness of the entities that join; the possibility of Marca Açores products to receive special focus amongst large retail and other participating retailers; The collective participation in regional, national and international promotional events, aimed at different individual target groups or companies.

Source: marcaacores.pt

Image 4 - The Azores is renowned for dramatic landscapes

SELF ASSESSMENT
WORKING WITH THE CREATIVE SECTOR

Q1 Who do you define as the creative industry on your island?

Q2 What have they contributed so far on the island with respect to innovation?

Q3 How has the local government (LG) stimulated the creative sector to contribute? Give your score (mark between 1-10) for the LG activities so far.

Q4 Particularly, to what extent has LG used the TIPPING Strategies 1a, 1b and 1c?

Q5 In your opinion: for which projects and how could LG stimulate the creative sector to make a higher contribution?

At what ambition level? Give your score for the future- and for which 2-4 innovation projects should LG aim for in cooperation with the creative sector?

RESULTS

Score to date: ☐

Future ambition score: ☐

PROJECTS

1 ☐

2 ☐

3 ☐

4 ☐

1a. Stimulate Experiments with New Technologies and New Societal Concepts;
1b. Stimulate the Development of Creatives' New Products and Ventures;
1c. Stimulate New Markets for/with the Creative Industry, including Own Procurement.

STRATEGY 2
LONG-TERM COOPERATION WITH SMES AND NGOS

For the TIPPING Approach, the "open innovation" model is the backbone of our cooperation style with industry and NGOs. In and around the Innovation Funnel, companies and local & regional governments work together in an innovation-ecosystem, as already depicted in the dance floor model of Figure 1. Various others have pointed at the essential role of government in this respect, not only as a supporter of but also as a long-term partner for SMEs and/or non-governmental organizations (NGOs) in this ecosystem. Mazzucato in particular pleads for a longer-term cooperation between government and promising start-ups and SMEs in innovation processes, with clear agreements on sharing potential future profits.

This requires (1) bureaucrats who are active out in the field; (2) who allow risk taking and failure; and (3) ambitious and challenging goals (Mazzucato, 2018). In addition, in pioneering island practices, we can also distinguish approaches in which large companies test their new, sustainable technologies through island experiments. Often, testing involves a crucial role with respect to the user experience but also learning trajectories for island engineers, installers, and other technical disciplines as early adopters. Several options can be mentioned under this strategy, from market stimulation to product development and experimentation; and from talent support and skill development to pressure cooking instruments as well as advanced business models.

Specifically, this chapter focuses on the following options:

2A Supporting Specific High Potentials
2B Stimulate the Market for Local Products and Produce
2C Stimulate and Support Product Development
2D Facilitate Pressure Cookers
2E Facilitate the Use of Modern Business Models

a. Supporting Specific High Potentials

On each island or archipelago of islands high potentials emerge: Small companies with often radical new ideas with a promising impact if successful, like for environmental issues, social care, ecotourism development, new ways of education, etc.

It is important for the local government to take extra and long-term care of these often vulnerable companies, to help them grow-up.

Local government can not only help by becoming a trustful interim-partner for these talents, but also by writing joint project-proposals which could for instance be financed by regional and national agencies. Moreover, they can co-promote the first prototypes delivered by the high potential on potential markets and within the own organizations. In addition, they can draw attention from the politicians for these potentials, leading to extra promotional support.

GRENDEL GAMES FRYSLAN

Image 5 - Grendel's Water Battle game

The Province of Fryslan has developed a long-term relationship with game design company Grendel Games and introduced the young company to the Wadden Islands communities within its' jurisdiction. As a consequence, Grendel Games has been able to introduce several of their products on the islands, like the Water Battle game (reducing water and energy use via a school children's competition).

Source: grendelgames.com

LOCAL MASTIHA PRODUCTS

In the North Aegean Sea Islands region of Greece grows the mastiha tree. It is an evergreen shrub that develops very slowly and becomes fully mature after 40-50 years, reaching up to a height of ca. 5 meters. Its lifespan is more than 100 years. Mastiha trees are an essential part of the maqui-type of vegetation found in Mediterranean countries. Particularly on the island of Chios, the trees have been planted since antiquity, offering the precious mastiha 'tears'. The teardrop shaped sap of the tree has been attributed unique nutritious and therapeutic properties, particularly in treating gastrointestinal conditions and disorders. The knowhow of cultivating mastiha has been included by UNESCO on its list of Intangible Cultural Heritage of Humanity.

Image 6 - Mastiha sap "tears"

The government of the North Aegean region has been facilitating innovative applications of mastiha with perseverance over the years, engaging farmers, involving EU-funding, helping to set up the Chios Mastiha Farmers Association and consequently the Mediterra SA in 2002, as a marketing tool, the development of new high quality mastiha-based products worldwide, and establishing a Mastiha Research Center Today, under the brand name "Mastihashop" a portfolio of more than 100 products is commercially exploited, including natural mastiha, chewing gum, cosmetic products, para-pharmaceutical products, food products, liqueurs, etc. Mastihashop has been officially nominated as a designated product of origin, has become world famous, and now includes a retail network of 16 "Mastihashops." On the roadmap to the future, the regional government and the local authorities are now engaging the farmers and product developers towards a next investment -of ca. 6 million euros- into the further elaboration of the product portfolio, to demonstrate even more how a small isolated island can become a world pioneer by innovating and managing its bio-based, renewable resources.

Source: Various websites, and Government of the North Aegean Region, Greece

Image 7 - High-quality products made locally with mastiha

b. Stimulate the Market for Local Products and Produce

Island municipalities and their larger regions can play a significant role, both directly and via indirect ways, in helping to stimulate the market for their locally produced goods and services. Directly: for instance, by becoming a -larger- user of the local producer's services. Indirectly: by promoting those services or supporting the local organization with innovation subsidies and/or with the formation of a strong business-infrastructure, for example, with the options to trade and test local products during public events, e.g. festivals, fairs, etc.

FEMI ON GUADELOUPE

FEMI, the only French-language film festival of this size in the Greater Caribbean, has a mission to promote cinematographic works and filmmakers from the West Indies-Guyana and more widely from the Caribbean, which are too seldom in the spotlight and thus often unknown to the general public. FEMI is also an opportunity to discover the best of international cinema through a diverse program of films encouraging reflection on social issues, but also to find emerging talent and highlight talented people.

It offers Guadeloupean audiences the opportunity to see more than 60 local, regional, and international films every year; feature films, short films, documentaries often unpublished and preview. The programming is eclectic, educational and very rich. The festival was initially created by women (femmes in French). It promoted the first female initiatives through movies. It has strong support from the local authorities of Nord Basse- Terre, who consider it a unique source of -social- innovation, emerging from cultural island roots.

Source: Promotion of Caribbean culture through cinema and art, and lefemi.fr

Image 8 - Filmographer photo inspired by FEMI Guadeloupe

Image 9 - Adventure trail in Madeira mapped out with WalkMe App

WALKME APP

At Madeira, a team of software engineers at the University of Madeira loved to hike on the more than 50 adventurous trails in the splendid nature that the island offers. With the support of the regional government, they decided to apply their strengths to this favorite outdoor activity, to create the WalkMe app: a digital guide with all the information required for hikers on the island. The app offers a trail map and tour information, also without an internet connection, as well as points of interest, like waterfalls, lagoons and 'levadas'. Since 2012, this WalkMe app is at the top of the list of applications of the Island of Madeira, downloaded by almost 100 thousand people, both tourists and residents, who explore the natural richness of the island. Being created by a team of local walkers, scientists and new ventures, the involved regional government and innovation agencies (including ARDITI, the Regional Authority for the Development of Research, Technology and Innovation of Madeira) are co-organizing facilities and means to maintain a leading position in this typical Madeira development area.

Source: walkmeguide.com

c. Stimulate and Support Product Development

As a local/regional government you can support the development of new products, services, and processes by your local industries. This may include more efficient production processes, with more efficient use of local resources. It can also concern new concepts like circular design (slowing, narrowing and looping the material fluxes on the island), the combined design of products and services (PSS), ecologically responsible landscape and town development, nature services, and new business development.

As partner in these development processes, a basic understanding of design methodology and tools is recommended. Good starting points are industrial design programs like those from the Aalto Design Factory (2018) and the Delft University of Technology, with its' Delft Design Guide (2010). With respect to the creation of novel product-service combinations, Bocken et al (2013) propose a straightforward method based on a value mapping tool.

For island urban development methodologies such as that from RMIT on sustainable scenario development and eco-acupuncture (Gaziulusoy & Ryan, 2017), or from AMS Amsterdam -Institute of Advanced Metropolitan Studies- are also sources of inspiration (AMS, 2018). Most recently, Fabrizio Ceschin of the Brunel University London and Idil Gaziulusoy of Aalto University Finland published a comprehensive overview of the design for sustainability field (Ceschin and Gaziulusoy, 2019). A PDF version of the book is available for free in Open Access from Routledge at www.taylorfrancis.co.

If local governments want to be a serious partner in a TIPPING development process, basic knowledge of such methods and tools is a must.

CIRCULAR VLIELAND

The Province of Fryslan supports an initiative from the island of Vlieland to redirect its linear economy towards a more circular one. The project has started with a metabolism study in which all in-, through- and outward material (including water and energy) fluxes have been mapped by Circular Economy specialist Metabolic. Based upon the outcomes, first options on narrowing, slowing and closing the island's material loops –better than today- have been formulated. For instance, value can be generated by utilizing nutrients from wastewater flows, instead of discharging them into the sea, composting of organic wastes can be improved, and an online but local marketplace can be created to buy, sell, and share re-usable goods. In the next phase of the project the various options will be further explored for implementation. In addition, creative sessions with tourists and other stakeholders will be organized, both for extra idea generation as well as to stimulate their practical contribution to the implementation plan.

Source: Metabolic (metabolic.nl)

CUPJE

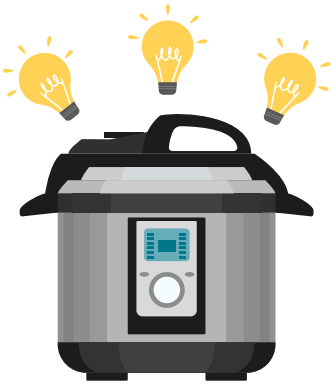
Stimulated and co-financed by the Province of Fryslan, Lab Vlieland and MSc TU Delft design engineering student Marta Axpe (2013) developed a foldable drinking device -CUPJE- for festivals and events, which is biodegradable -with local plant seeds inside for local re-growth- and plastic free. High-quality water is tapped from the locally available grid.

Image 10 - CUPJE biodegradable drinking cup for festivals and events

Cupje and its design variations have found their way well into the events market today. Source: Library TU Delft. (ref: Educational Repository - Axpe, Creating Drinking Water Awareness at the Into The Great Wide Open, 2013.).

Source: Library TU Delft.

d. Facilitate Pressure Cookers



Pressure Cookers are design-creativity based events in which stakeholders and creatives attempt to find solutions for certain local or regional problems within a short period of time (under pressure, in 1 day for instance). Pressure Cookers have proven to be very effective and efficient means to suggest options and ideas out-of-the-box, particularly for complex and persistent problems (House of Design, 2018; DeLille et al, 2010).

Since the organization and execution of a pressure cooker can be realized in a low-cost way – mainly via the creative brains of the involved participants and their facilitators- it is a highly recommendable tool for innovation in a TIPPING context. Particularly, at the start of an island challenge, local and regional governments are advised to stimulate or take the initiative in the use of this tool.

EU REGIO CRAFT PROJECT

Kavala, Greece, has a long tradition of making candles. In the last decades, knowledge of and interest in hand made candles is decreasing. The challenge for the craft ladies involved was how to interest new target groups while preserving the craft knowledge, by using it in a new way, not necessarily in the same form or same function. The KAVALA craft ladies were carefully matched to a designer of textile and ceramics from Latvia via a House of Design's shaped Craft Design Pressure Cooker. The designer had a valuable know-how of international crafts and the story behind their designs. During the Pressure Cooker workshop, she suggested to be inspired by patterns of old Latvian textiles in different modern design objects. The result from the Pressure Cooker was a wax kit design, inspiring you to 'play with candles with your fingers' like most children like to do. The kit

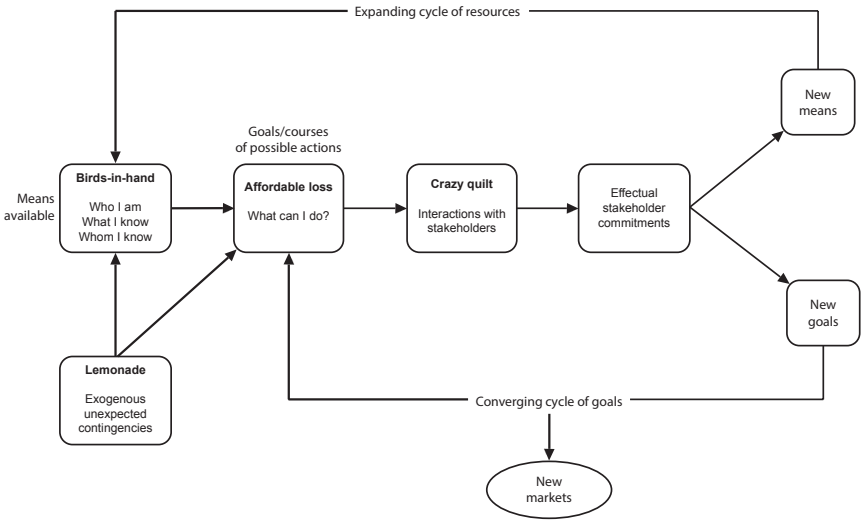
includes a canvas, wax, colors to mix and a manual. The users can shape various colors of candle wax and paint it on the canvas by spreading the wax on it with their fingers. As soon as the wax is dry, the canvas can be put on the wall like a painting.

Source: EU REGIO CRAFTS Project

e. Facilitate the Use of Modern Business Models

Policy makers and implementers can also act as supportive agents and intermediaries of modern business models in different contexts. Two approaches should be mentioned here, the more generic effectuation model approach, and since islands in comparison to the mainland are usually isolated when it comes to the fast availability of various resources, the Bricolage model.

Figure 3 - Effectuation Model



Source: Keskin (2015), adapted from Sarasvathy et al (2014).

Sarasvathy (2008) and Keskin (2015) argue that for successful start-up innovation, standard-marketing approaches are less relevant. They argue that instead, the understanding of the behaviour of "expert entrepreneurs" is crucial, as illustrated via a special framework of the Effectuation Model. This model includes four main "effectuation principles" which are essential for the explanation of entrepreneurial decision-making logic in uncertain situations.

Birds in hand

The process starts with means (not specific goals).

A certain dream or motivating perspective is leading: what do I want to achieve?

Ask yourself these 4 questions: Who am I? What do I know? What are my potentials? Whom do I know?

Affordable Loss

Don't take big risks.

How much loss can I afford (instead of asking: how much will I gain)?

Crazy Quilt

Partnership is crucial, with self-selected stakeholders who make real commitments.

Sharing risks.

Lemonade

Aim to exploit unexpected contingencies.

Make lemonade out of it.

SUSTAINABLE DANCE CLUB

The original idea of the Sustainable Dance Club (SDC) was to provide the club circuit with a broad portfolio of advanced sustainable products and services, making dance clubs a lighthouse of sustainable innovation in Dutch society. The product idea was that forces exerted on the floor could be converted into electricity through an electromechanical energy generator and stored in another medium or immediately used by other equipment.

Although the ambition of the firm was initially to sell these flux floors to clubs, the clubbing market did not take off and the business model transformed into a rental scheme for events and other organizations.

Since the beginning of 2011, Sustainable Dance Club has been developing a new application, called Sustainable Energy Floor (SEF). SEF is designed as a large-scale application for public spaces where a large volume of people walk, such as stadiums, airports, and shopping centres. The floors are also now used as renewable energy demonstrators at consumer oriented conference presentations and road shows of green energy suppliers and distributors, aimed at getting attention of the public in order to increase their market share. The technology used in SEF is the same as SDC however design considerations and market contexts are different.

As the PhD dissertation of Keskin indicates, most of the activities and managerial decision-making steps for the SDC development follow an effectuation approach, including a role for the effectuation principles, rather than the standard rational-marketing approach. In close connection, local and regional governments should observe their partners in industry and the start-ups they cooperate with from a modern perspective. They should be active in bringing in and following Effectuation Model insights, including their own observations and insights in the field of "opportunistic" entrepreneurial behaviour. In this way, as active intermediaries, governments can also play an important role in the diffusion of new business insights in their region or municipality.

Bricolage Model

In an emerging island economy context, innovation approaches like described by Jin (2015), such as "Bricolage" -an adaptive approach creatively using scarcely available means- can be quite relevant. Bricolage is a process that is linked to observation and assessment of resources available in the environment, and then taking a preference for using "whatever is at hand", rather than searching for new resources.

Island governments can stimulate creative Bricolage through workshops with challenging goals like: "do more with less", "keep the island in our own hands", "-virtually- cut the infrastructure lines with the mainland", and by building on the collective memory.

For a good example of Bricolage see:

The use of straw for the distributed heating system on Samsoe Island - Samsoe Energy Academy energiakademiet.dk

SELF ASSESSMENT

LONG-TERM COOPERATION WITH SMES & NGOS

Q1 Who do you define as the SMEs & NGOs on your island?

Q2 What have they contributed so far on the island with respect to innovation?

Q3 How has the local government (LG) stimulated SMEs & NGOs to contribute? Give your score (mark between 1-10) for the LG activities so far.

Q4 Particularly, to what extent has LG used the TIPPING Strategies 2a - 2e?

Q5 In your opinion: for which projects and how could LG stimulate the island's SMEs & NGOs to make a higher contribution?

At what ambition level? Give your score for the future- and for which 2-4 innovation projects should LG aim for in cooperation with the SMEs & NGOs?

RESULTS

Score to date: ☐

Future ambition score: ☐

PROJECTS

1 ☐

2 ☐

3 ☐

4 ☐

2a. Supporting Specific High Potentials
2b. Stimulate the Market for Local Products and Produce
2c. Stimulate and Support Product Development
2d. Facilitate Pressure Cookers
2e. Facilitate the Use of Modern Business Models

STRATEGY 3
STIMULATING THE NETWORK OF YOUNG ENTREPRENEURS

Facilitating and accelerating the activities of young people on islands, and attracting them there in the first place, are crucial elements for the innovation policy. For those islands and regions, which are large and fit enough to maintain a higher education institute, either a Polytechnic or University, a good basis and facilities exist for a contribution of students and staff to dedicated innovation trajectories on the island. Longer-term research of those institutes can even help to build a unique knowledge base, with specializations that are both a structural source of innovation, export and income for the island.

Smaller islands usually do not have this opportunity. In this case, the local government can foster "lean and mean" facilities, which even on a modest scale can bring an extra impulse of innovation to the island. Within TIPPING we distinguish three options, aimed at student contributions from mainland higher education institutes, the establishment of working and housing facilities for research project- and internship-guests and NGO- (Non-Governmental Organization-) facilitation.

The key options highlighted in this chapter are:

3A Support Students' Innovation Projects

3B Help to Create Housing and Working Facilities;

3C Facilitate the Establishment of Living Labs and Competence Centers.

a. Support Students' Innovation Projects

Municipalities or regional island authorities can support initiatives, which bring students and their projects (thesis, graduation, PhD fieldwork, internship, special course/curriculum, etc.) to the island, to explore the islands' problems and opportunities from a fresh perspective. Although some of the resulting ideas and proposals might be too idealistic for direct implementation, they can help to set the agenda for innovation on the island and lead to structural cooperation with mainland higher education in different disciplinary backgrounds.

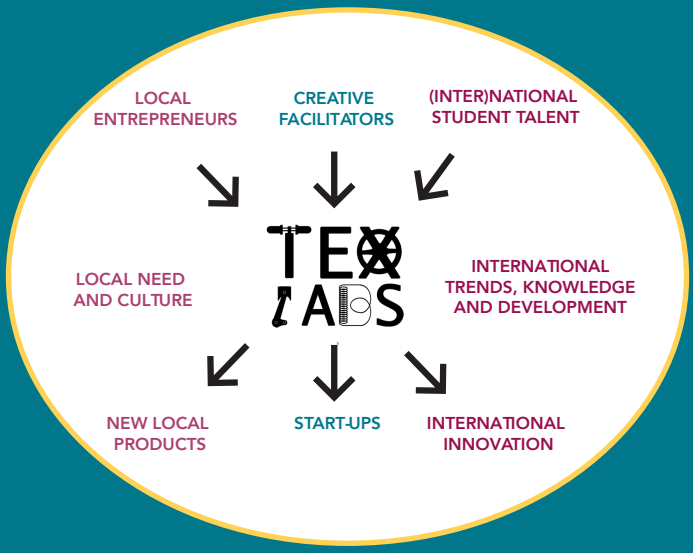
> *Islands should profit from their unique position, being perceived by students and staff as places "par excellence" to discuss and test out new ideas in isolation and on a small scale.*

Local governments are in the position to strengthen the initiatives of island individual firms, NGOs, and sectorial organizations (agriculture, fisheries, services, tourism, recreation, transport, etc.) that are looking for student input from the mainland. Particularly from a municipality, a relevant own initiative in hiring students for interesting projects would be expected to set the leading example and create a "lighthouse" position.

TEXLABS

The NGO TexLabs on the island of Texel (Netherlands) started as an idea of Pepijn Lijklema. After finishing his MSc Thesis in 2008 at the Delft University of Technology, on the design of a smart, sustainable public light system on the island, Pepijn started a one-person consultancy firm on the island. During a number of years, he helped to successfully implement the new system, as the leading smart public light system in the Netherlands. Gradually, he built such an interesting -independent, trustful and balancing- position on the island that step-by-step the stakeholders, with the municipality of Texel as a main client, started to request his input and that of follow-up students -and staff- from mainland institutes for student job positions and vice versa. With strong support from the municipality of Texel, Pepijn and a group of young islanders, recently established an NGO with the main goal of brokering between knowledge institutes from the mainland and the various island stakeholders who are searching for their knowledge.

Figure 4 - TEX LABS



Nowadays, each year TexLabs organizes ca. 10 higher education and research institution trips to the island. These range from TU Eindhoven, to the University of Utrecht, Hanze Polytechnic Groningen, the Polytechnic of Amsterdam, that of Alkmaar, and even international visits involving more than 250 students and their staff. TexLabs is a source of inspiration for the inhabitants of Texel, not only with respect to new knowledge and knowhow and as a "creative facilitator" but also as an activity that sparks new ventures on the island by students who decide to stay - closing Pepijn's circular loop.

Source: TexLabs, 2018.

Image 11 - Photo of team-building and training inspired by TexLabs circular approach

Image 12 - Island stakeholders playing TexLabs Round-of-Texel Energy Game

One of the novel products TexLabs has been developing is the Round-of-Texel Energy Game. The goal of the game is to explore different scenarios for the future energy system of Texel in a creative way. The concept of the yearly, International Texel Catamaran Race around the island is chosen as framework. Only through bottom-up cooperating in the creation of sustainable energy generation as well as improving efficiencies and taking demand reduction and management into account, the players cross the finish successfully and in time. Each player represents a certain stakeholder group and has its own interests and resources to submit. However, it is not possible to reach the goal of a self-sufficient energy island, without agreements with other stakeholders. On islands, the Round-of-Texel EnergyGame is played in various sessions with inhabitants, village committees, members of local parliament, students, economic sectors (agriculture, tourism, housing, service, transport, installers etc. industry), nature organizations and -other- NGOs.

Source: TexLabs, 201.

Image 13 - Students from the Azores Business Development Society

ENTREPRENEURSHIP TRIPLE HELIX (ETH)

The University of the Azores and SDEA (Azores Business Development Society, EPER), developed and provide mentoring guidance to a project, named the Entrepreneurship Triple Helix. There, students with training in entrepreneurship interconnect with research fellows to create multidisciplinary teams and synergies, with the goal of developing a business idea based on their lines of research.

It is developed in three phases, starting with the Triple Helix Forum, which discusses topics on entrepreneurship, research, good practices and success stories, involving government entities, the University of the Azores, and companies.

The second phase stems from the development of business ideas and the realization of workshops. The project culminates with the presentation of the business ideas in a pitch format before a jury that selects the three best ideas. All of the students in charge of the business ideas receive information on the in-place measures and incentives that support business creation.

The ultimate aim of this project is to create academic spinoffs and start-ups that promote the importance of research with the leverage of competitive advantages for companies, as well as in creating value through innovation.

Source: SDEA, sdea.pt

b. Help to Create Housing and Working Facilities

Local governments can support the longer stay of students and staff from the mainland by providing housing and working facilities. Islands with one or more own institutes of higher education will usually possess an infrastructure for this. Others will have to improvise with the means available at hand and/or efficiently create new basic facilities. On islands with a high amount of touristic resorts, hotels, and holiday homes, ample possibilities will exist to host students and staff, particularly off-season.

SAMSOE ENERGY ACADEMY

Based on the success of its' world leading island transition project on sustainable energy, Samsoe Island (Denmark) has been able to partly re-invest the profits from sustainable energy into the establishment of their own Energy Academy building. The building is not only a demonstrator of the newest, attractive sustainable energy technologies, but also attracts many visitors from around the world each year. It can host students and staff for longer internship periods, with nearby places like Ballen providing housing, food, and recreation facilities.

Image 14 - Samsoe Energy Academy Building

With the support of the local, regional and national government, the Energy Academy has not only conquered a unique position and hundreds of admirers and partners in the world, but via the infrastructure of the Energy Academy building it can continue to keep this front-runner position.

> *"The world's best and most unique energy transition minds continue to meet in and via the Energy Academy in an ongoing process, also thanks to its facilities!*

Source: Samsoe Energy Academy

c. Facilitate the Establishment of Living Labs and Competence Centers

Islands are excellent places to establish living labs. Living labs can mean an environment for experimentation and testing; a methodology/approach, and a system for innovation for generating and testing innovative products, concepts, and services in a real-life environment. Living labs enable people, users/ consumers of services and product, to take active roles as contributors and co-creators in the research, development, and innovation process. The starting point for any living lab is to, in close cooperation with involved stakeholders, develop product and services from the basis of what users really want and need. The main role of the living lab is to engage and empower users to participate in the creation of valuable and viable assets.

Living labs on islands can be central meeting places, often with only simple technical facilities, serving as idea generators and project builders for innovation. The island setting -certain isolation- can serve as an additional factor for experimenting in a contained, real-life environment. Local and regional governments can help initiatives in this area, for instance, in connection with the many arts, crafts, (pop-)music, cultural-, tech-, etc. festivals and events that are commonly organized on islands. Since these festivals attract a lot of young talented people from both on-island and the mainland, an outstanding opportunity emerges to turn festival projects into longer-term programs for living labs on islands.

LAB VLIELAND

This lab on the island of Vlieland (NL) presents itself as "The Workplace for Renewal & Imagination; a place where do-ers and thinkers develop skills and knowledge and put this into practice." Lab Vlieland originated under the auspices of Into The Great Wide Open, one of Vlieland's yearly pop festivals with limited access (max ca. 5,000 visitors). By restricting the quantity of visitors, the festival is able to function as a testbed for the smart use of sustainable energy and resources and provide festival participants plenty of space, protecting the island's unique nature.

Image 15 - "Waste is a raw material" signage at Into the Great Wide Open festival

Lab Vlieland invites students and enterprising producers to provide and experiment with sustainable solutions, that can make a festival a self-sufficient community, with minor impact for the inhabitants and nature. In close connection, Lab Vlieland's goal and purpose is to share the knowledge and experience developed on and near the island with its surroundings; with the rest of the island, stakeholders on the mainland, and with related festivals. Particularly, the lab is specialized in smart power management systems for festivals, the re-use of (waste)water, design for the circular economy and new production technologies, such as 3D printing.

Source: labvlieland.nl

SAAREMAA SMALL CRAFT COMPETENCE CENTER

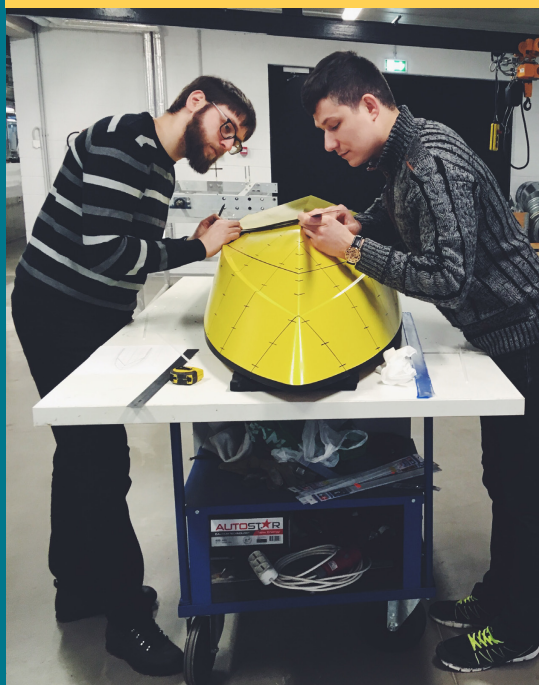
At the initiative of the unit of Tallinn University of Technology (TalTech) on Saaremaa, a competence network was established in 2009, bringing together organisations from public, non-profit and business sectors. The network identified small craft building as the main field of smart specialisation on the island. Shipbuilding has been a historic tradition on the island but was interrupted during the Soviet period. At the beginning of 1990s, a number of leisure and workboat building companies were established on-island and they acknowledged fostering innovation as critically important for a successful modern industry.

During the following year, the idea of the Small Craft Competence Centre (SCC) was developed and necessary analysis were carried out. It was decided to establish SCC in the TalTech Saaremaa unit. SCC has been developed in cooperation with TalTech, Association of Estonian Marine Industries and local authorities (knowledge and skills, finances, political commitment). Businesses and the public sector retain their active involvement at the strategic planning level of the centre. In 2010, Small Craft Building applied higher education curriculum was launched in the TalTech Saaremaa unit.

The key focus areas of SCC are education, R&D activity and rendering development services to businesses. SCC creates and accumulates competence and transfers it to industries in model testing (experimental tests in the 60m long towing tank, simulated digital tests), design and engineering, materials testing. The scope of beneficiaries is wide and not exclusive to the marine technology industry. Since 2016, SCC has been conducting its own research activities in hydrodynamics.

Source: Saaremaa small Craft Center, scc.ee

Image 16 - Shipbuilding at TalTech Saaremaa



EDUKONTOR

Edukontor is a creative coworking space in the heart of Kuressaare on the island of Saaremaa, Estonia. This coworking space is a place where freelancers, teleworkers and small businesses share office space and exchange ideas and contacts, filling a gap on the rather traditional island.

The office space was opened in May 2017 and is run as a non-profit organisation. The space was named after a former grocery store called "Edu" ("success" in Estonian) that operated in the building years ago. Creating the office was initiated by a group of people who had moved (back) to the island and were working from a distance or starting their small businesses and were in need for a small working space from time to time.

Today, it's possible to rent a desk or a room from an hour to a month or become a renter for a longer term. Its great location and a friendly and diverse coworkers' community make Edukontor a pleasant place to work. Edukontor enables locals to leave their home offices, digital nomads to make a longer stop here and anybody outside Saaremaa to open a temporary office in Kuressaare. The organization also arranges events to promote remote and flexible work.

Image 17 - Edukontor coworking space

Currently, Edukontor brings together researchers, film distributers, photographers, make-up artists, drafters, drink producers, journalists, IT specialists, trainers, a craftsman, bookkeeper, fire safety specialist, cook, draughtsman, captain, marketer, translator and a designer. Working side-by-side and interacting with people of different backgrounds creates synergy and cooperation. The people with a wide variety of knowhow and experience willingly share their skills by giving lectures or hosting discussion workshops. These events are open-access and thus provide true added value to the people of Saaremaa.

Source: saaremaavald.ee

SELF ASSESSMENT

STIMULATING THE NETWORK OF YOUNG ENTREPRENEURS

Q1 Who do you define as the "young entrepreneurial potential" on and for your island?

Q2 What have they contributed so far on the island with respect to innovation?

Q3 How has the local government (LG) stimulated the network of young entrepreneurs to contribute so far? Give your score (mark between 1-10) for the LG activities so far.

Q4 Particularly, to what extent has LG used the TIPPING Strategies 3a, 3b and 3c?

Q5 In your opinion: for which projects and how could LG stimulate the young network of entrepreneurs to make a higher contribution?

At what ambition level? Give your score for the future- and for which 2-4 innovation projects should LG aim for in cooperation with the young network of entrepreneurs?

RESULTS

Score to date: ☐

Future ambition score: ☐

PROJECTS

1 ☐

2 ☐

3. ☐

4 ☐

3a. Support Students' Innovation Projects
3b. Help to Create Housing and Working Facilities
3c. Facilitate the Establishment of Living Labs and Competence Centers

STRATEGY 4
FOSTER THE IMPORT & EXPORT OF KNOWLEDGE

The import and export of novel knowledge, knowhow, and skills can be another important leverage point for local and regional innovation governance. With a university or polytechnic active on the island, national and international scientific exchange programs will be the natural situation. But even in that case, and particularly for islands, which do not have a higher education institute, the next policy options can deliver added value. The TIPPING Approach includes: best practice benchmarking, "next practice" proposal writing, tool creation and diffusion, and the creation of "flagships."

This chapter describes and gives examples of:

4A (Inter-)national Benchmarking of Best Practices

4B Formulate "Next Practice" Project Proposals

4C Educative Tool Development and Diffusion

4D Create and Demonstrate Flagship Innovations

a. (Inter-)national Benchmarking of Best Practices

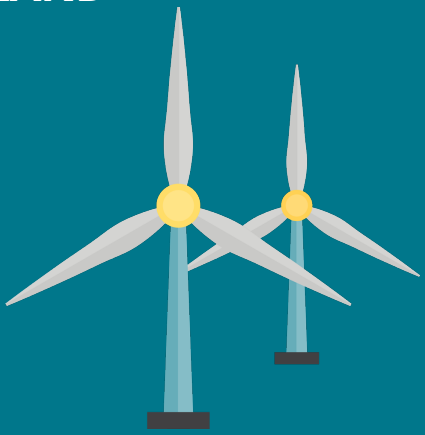
When it comes to innovation, popular thinking often embraces the idea that only via research and development and completely new technologies innovations are achieved, based upon unique intellectual property rights. However, in contrast to industrial practice, particularly amongst SMEs, the regular approach is to compare the quality of one's own products with those of the competition. By "product and service" benchmarking, detailed insight can be gained from relevant solutions by others active on the market. Although this approach is sometimes shed in a negative light because of its association with blind copying, in terms of smart innovation it absolutely makes sense, and that's the reason its use –particularly in an informal way- is widespread around the world. Experiences with environmental benchmarking of electronic products and other household goods have proven to deliver considerable progress in terms of sustainability for all producers and consumers, contributing to the UN Sustainable Development Goals (UN, 2017) over the years (Brezet & van Hemel, 1997; Stevels, 2007).

Island governments can apply benchmarking from their island or regional perspective, but also stimulate certain sectors or branches on the island to compare their offerings with those from other islands. Particularly when it comes to the benchmarking of what are generally regarded as European or global "best practices" it makes sense to study, visit and analyse them, to see whether essential elements can be "scenario-free" adopted, even if the context is different. In the TIPPING Approach, the stimulation of best practice benchmarking is considered to be a key element for innovation.

Image 18 - Local making use of electric energy for car charging on Samsoe

SAMSOE ENERGY ISLAND

In Europe, but even globally, Samsoe Island (DK) is seen as a best practice for the transition from a fossil fuel based local economy to a self-sufficient sustainable energy island. Each year thousands of international guests visit the island to perform a benchmark and to find out in detail which factors and actors have played -and are still playing- an important role in the transition process.



For a comprehensive vision, the researchers at the Energy Academy advise and help each visitor to go out in the field, visit the solar, wind, and biomass plants and talk with the inhabitants of the island in an informal way, to independently learn from their experiences.

Source: Samsoe Energy Academy
energiakademiet.dk

b. Formulate "Next Practice" Project Proposals

Innovation projects require appropriate project proposals; either aimed at direct industrial financing, or co-financed by local, regional, (inter-) national or other special funds. A way for local governments to gain the best results from these projects, is to demand that -part of- the content in such proposals be built upon best practices, and thereby include the so called "next practices" as the logical follow-up. This approach is very much in line with the step-by-step "probing and learning" theory and practice, which for instance has made the Danish wind industry a world leader. By stimulating researchers and their innovation funnel partners to include next practice elements in their project proposals, innovation on and via islands can be fostered and accelerated in a cumulative way.

SUSTAINABLE LIGHT PLAN TEXEL

The development of the sustainable outdoor light plan on the island of Texel (NL) started with a graduation project in 2008 by a MSc student from the Faculty of Industrial Design at Delft University of Technology, in assignment of the Engineering Department of the Municipality. Instead of "inventing the wheel again" the student built on the outcomes of previous, ground-breaking work of colleague students in the City of Rotterdam. In Rotterdam, not only flexible LED lights had been applied for the first time in public squares and on main roads, but also "new" light reduction principles, like "no light WHERE not needed" and "no light WHEN not needed."

In the meantime, new, more efficient and attractive lighting frame designs became available, including LED markers fixed at the ground level on roads, as a replacement for old-fashioned and inefficient standard light posts. Together with new power management systems and a special solar PV-park, the Texel light project built upon and integrated these elements into a fully integrated smart public light system on the island, which was ready in 2015. Using only 35% of the electrical energy needed for the old system, the new solar park has sufficient power to make the Texel public light system "energy neutral."

Source: Municipality of Texel, 2012

c. Educative Tool Development and Diffusion

Educative and training tools can be a powerful means in the diffusion of innovations, stand-alone or as part of larger communication and education activities and programs. They can be of serious nature, like reports, guides, videos and manuals with worksheets, or involve modern social media including websites and more playful games, from modern digital ones to old fashioned cards, which attempt to get the users actively involved. Their orientation can be aimed at different target groups, like students, end-users or involve a train-the-trainer perspective. Local and regional governments are challenged to help innovators in the development and diffusion of such tools, and advise them on potential cooperation with tool developers, from universities to game designers and communication and media consultants. The outcomes of the tool application on another island or field can help to build additional knowledge, in line with a practice-based research approach.

Image 19 - A starry sky can be seen on Texel thanks to new light reduction principals

ONLINE LOCAL PIONEER COMMUNITIES

The Energy Academy of Samsoe created an online guide to inspire and empower local communities to think big and become pioneers for sustainable development. It is an excellent resource that is freely accessible and includes an abundance of informative material such as experiences, advice, tools, methods, stories, scientific perspectives and videos.

Visit: pioneerguide.com

d. Create and Demonstrate Flagship Innovations

In the TIPPING concept, it is a serious co-responsibility of island governments to help entrepreneurial agents create, probe and learn from, as well as communicate on local innovations. With this open-innovation model and innovation funnel in mind, the TIPPING approach proposes to consider policy makers and managers on islands as special, but serious and relevant co-designers and accelerators of potentially powerful regional innovations.

Particularly, for this argumentation, Mazzucato demonstrates that co-creation and long-term cooperation of governments and industry are needed particularly for those common-good innovations that otherwise never would have been addressed by industry alone (Mazzucato, 2018). By structurally helping in and around the innovation funnel, the chances of local flagship innovation success definitely will be relatively higher and create a unique and competitive position. Once unique flagship innovations have been demonstrated on the island, local governments should also contribute to their promotion and export, including the use of soft and informal instruments.

AIR CENTRE

Atlantic Interactions is an intergovernmental initiative to unleash the potential of the Atlantic Ocean for Society. It fosters knowledge-driven solutions addressing national priorities and global challenges that require interdisciplinary research and innovation of complex Earth systems through international cooperation. This intergovernmental initiative is being implemented through the Atlantic International Research Centre (AIR Centre).

The program recognizes the relevance of an integrative approach from deep-sea to space, allowing a holistic governance of the Atlantic region and improving its prosperity and the wellbeing of its citizens. It aims at fostering new paradigms of interaction across the Atlantic and across disciplines to foster new knowledge on ocean, climate as well as energy and resources sustainability, for the benefit of decision-makers, researchers, companies and society in general.

As part of the AIR Centre network and within its framework, the Island of Terceira, as one of the islands of the Azores archipelago and associate participant in the EU Island of Innovation program, has established a special ESA_LAB facility, aimed at the development and promotion of scientific and technical capacity in space-based earth observation technologies and data.

In addition, the Terceira AIR-related facilities will host a Marine Biodiversity Network node, which belongs to the Integrated Ocean Observing System (IOOS). From a TIPPING perspective, the AIR Centre envisaged activities on Terceira are considered as promising innovation flagships under development, with not only regional or national impact potential, but even international.

Sources: atlanticinteractions.org, ptspace.pt/esa-labazores-at-the-air-centre, azores.gov.pt

SELF ASSESSMENT

FOSTER THE IMPORT AND EXPORT OF KNOWLEDGE

Q1 Who do you define as the "knowledge actors potential" on and for your island?

Q2 What have they contributed so far on the island with respect to innovation?

Q3 How has the local government (LG) stimulated the knowledge sector to contribute? Give your score (mark between 1-10) for the LG activities so far.

Q4 Particularly, to what extent has LG used the TIPPING Strategies 4a - 4d?

Q5 In your opinion: for what projects and how could LG stimulate the knowledge sector in and around your island to make a higher contribution?

At what ambition level? Give your score for the future- and for which 2-4 innovation projects should LG aim for in cooperation with the knowledge sector?

RESULTS

Score to date: ☐

Future ambition score: ☐

PROJECTS

1 ☐

2 ☐

3 ☐

4 ☐

4a. (Inter-)national Benchmarking of Best Practices
4b. Formulate "Next Practice" Project Proposals
4c. Educative Tool Development and Diffusion
4d. Create and Demonstrate Flagship Innovations

STRATEGY 5
COMMUNITY INVOLVEMENT

Although local and regional governments themselves already represent a democratic form of "community" from an innovation perspective, additional community formations might be stimulated as well to fulfill certain societal tasks, in which a strong majority support of the inhabitants is needed, and special interests are at stake. In such cases, the need felt on islands "to keep things in our own hands" can be transformed in own communal organizations, with stakes for everyone.

Typical issues for which these special communities might create appropriate solutions are ferries and other public transport, energy and water services, tourist resort building, nature protection, etc. Some of these aspects, like nature protection, might already be covered by -also locally representative- national organizations or NGOs in the area of nature and landscape conservation, bird protection, plant and tree protection, etc However, with the transition to a more sustainable society and the UN Sustainable Development Goals as the ambition (UN, 2017), new special community tasks emerge all the time. Local and regional governments can facilitate these special communities both at their establishment and while in charge their special tasks.

Another responsibility of the island government is to develop future visions, which are challenging, attractive, and realistic when it comes to feasibility. Consulting and otherwise involving the inhabitants and other island stakeholders, in a well-designed democratic and transparent way, in decision-making with respect to the steps to be made and innovation required, is part of the government's job. Included in such a process can be elements of competition, like when multiple villages on an island start an open competition to become "the best," for instance in sustainable transport or housing, in promoting an active contribution to the solution of the island's issues, etc.

Along this line, TIPPING recommends island governments the use of the following "community" related policy options:

5A Create a Challenging Vision

5B Working with the UN SDGs (Sustainable Development Goals)

5C Communicate for Acceptance (E = C x A)

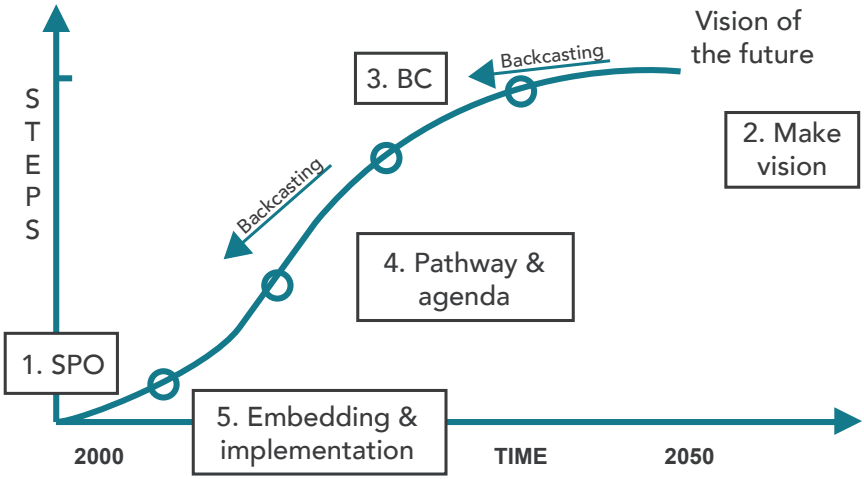
5D Organize Community Competitions

a. Create a Challenging Vision

Local or regional governments can help formulate a challenging vision for the future, including urgencies to consider as policy priorities. For instance, many islands are by definition confronted with the consequences of climate change or face a net outflow of young island-born talents, who move to the mainland for career opportunities.

The backcasting scenario approach is an interesting methodology here: Reasoning back from a desirable future scenario to today, while step-by-step envisaging obstacles to overcome and benefits to profit from along the journey with the involved stakeholders (Quist, 2007; Quist, 2013). Also mentioned here should be the eco-acupuncture approach of Melbourne based Prof. Chris Ryan et al (Gaziulusoy & Ryan, 2017), using participatory design visioning for sustainable urban transitions. Undoubtedly, this is an interesting approach for sustainable island futures and innovation road mapping.

Figure 5 - Backcasting



Source: Jaco Quist, 2013

ECO-ACUPUNCTURE

According to Idil Gaziulusoy and Chris Ryan, islands and cities can mutually benefit from each other's experiences.

Chris Ryan cited:

> A new focus on cities in global action on climate change reflects their role:
>
> - in economic development (from production, innovation and services);
> - as engines of greenhouse gas emissions (both from consumption and production);
> - as potent agents of change (an emerging political force), reflecting rapid urbanization, where over 68% of global population is projected to live in cities by 2050;
> - as shapers of cultural allegiance and belonging (with successful cities generating a potent sense of social identity);
> - as generators of creativity and innovation (related to the density and diversity of social interaction).

Cities are also increasingly vulnerable to climate change impacts, both chronic (progressive shifts in weather patterns) and acute (extreme weather events).

Carbon disentanglement and building resilience, becomes a truly transformational challenge for a city; it requires a significant shift in its 'metabolism', a realignment of all its systems of provision, its established and interconnected infrastructures of life that make the city productive and habitable…energy, water, food, transport, buildings and open-space, waste disposal, information, products and services.

For every city those systems have developed in response to different resource contexts (regional eco-systems, arable land, seasonal weather, rainfall, rivers and so on), different spatial conditions, different economic histories and utilizing different technologies. Systems of provision become deeply interconnected in different ways, around different physical morphologies. Because of that interconnection, transforming the city ...cannot be approached through a reductive process taking each of the systems of provisions in turn; they are not independent variables.

A living city is even more complex; its metabolism is not merely a function of its ecological-technological-physical systems, it reflects human agency. Architectural and urban history demonstrates how profoundly economic systems, cultures, rituals, practices, aspirations, lifestyles, power structures and so on, are intermingled with the physical form of our constructed world. "Transforming these intermingled technical-physical-ecological-social-cultural systems represents an archetypically wicked problem, where an effort to solve one aspect of the problem may reveal or create others."To tackle these wicked problems -and their 'innovation opportunities'- Ryan et al have developed the EcoAcupuncture approach, which in principle also applies for complex problems on islands. In this approach design-led visioning leads to a number of glimpses into the future – visions of desirable, low-carbon and resilient futures.

Next, these visions are used to facilitate strategic conversations among stakeholders in order to develop 3-4 distinct future scenarios and transition pathways. However, this is not the end of the EcoAcupuncture trajectory: in the final step an action plan and specific EcoAcupuncture projects are created and implemented with the involved stakeholders in order to present a 'taste of the future' via the realization of EcoAcupuncture demonstrators. According to Gaziulusoy (2019), islands should start to intensify the use of similar approaches, since they are lacking often a well elaborated future vision, based upon long-term oriented, possible and desirable low-carbon, sustainable scenarios.

Sources: Ryan C. et al, 2019 and Gaziulusoy I. 2019.

b. Working with the UN SDGs (Sustainable Development Goals)

When developing your local or regional vision, it makes absolute sense to take the 17 United Nations Sustainable Development Goals as points of departure. With 17 goals and 169 sub goals and a similar large amount of indicators the endeavour seems at face value quite bureaucratic and a mission impossible. However, these challenges can be overcome by a smart, efficient and well planned local or regional program.

The attractiveness of the UN 17 SDG Goals is that they involve a holistic approach, with comprehensive, global values: social aspects like poverty, inequality, cultural values, education facilities, gender issues etc. are considered equally or even more important than "classic sustainability" aspects, such as environmental impact and economic viability. (Reubens, 2016). Therefore, frontrunners among countries, regions, cities, companies, universities etc. are quite active in adopting the UN SDG Goals, discussing what the consequences are, how the goals in an concerted action by all stakeholders can be realized and who can contribute what over time.

Joint regional programs are designed in such a way that the SDG Goals are integrated in larger themes and tasks are divided over time and between stakeholders, to increase the feasibility.
It is absolutely clear that public municipalities and regional entities, as close partners of the national government, have a special responsibility for these initiatives and should adopt a facilitating role in developing a local or regional SDG program on their island.

Such a process could go very well hand-in-hand with the approach described above, regarding using Backcasting scenario's for vision development.

More info: UN, 2017. The Sustainable Development Goals 2017. United Nations, New York, USA.

MEGA PROJECTS AALBORG

An example from the mainland

The region of North Jutland (Denmark) around the city of Aalborg and the AAU Aalborg University, with inputs from industry and other stakeholders, recently have decided to start a number of "Mega Projects" in order to realize the UN SDG Goals. The umbrella projects aims at significant societal change, in which always one or more of the 17 SDG Goals are addressed, over a more-year planning. Knowledge-action-networks are the core of the program, in which collaborative communities engage in themes critical to local and global sustainability. The first two Mega Projects themes are: The Circular Region and Simplifying Sustainable Living. Both Mega Projects have been commissioned by Aalborg Municipality. For instance the Circular Economy project includes the following:

Concretizing activities to be undertaken in the municipality and in the region;

Identifying actual opportunities and solutions for slowing, closing and narrowing resource loops; e.g., how to design for reuse, disassembly and recycling, or how to ensure collaboration between different stakeholders, sectors, and disciplines, including all curricula of the five AAU Aalborg University Faculties.

Source: Stoustrup, 2019

c. Communicate for Acceptance (E = C x A)

In communication practice, the law of Wibier* says: the effect of an innovation project = communication x acceptance. In other words, important project outcomes and lessons should both be communicated very well and in such a way that broad support from island stakeholders will be gained. Of course, this is a message for innovation project stakeholders, but also to local governments who can play a special role in safeguarding this 'law of practice' and stimulating its application.

*Based on and adapted from various original sources and practiced by: Jan Wibier, Director of the Province of Fryslan, The Netherlands, 2004 - 2009

THE JAFA PROGRAM

With regards to innovation as 'doing things differently', through communication in Guadeloupe a special program has been set up for disease prevention and health promotion with respect to toxic releases in the environment, starting on April 1st, 2009. The program was launched by IREPS (Guadeloupe's Agency for Health Education and Promotion) and partners (national services, medical and pharmaceutical sectors and associations). It was financed by the Regional Health Agency (ARS), as part of a National Chlordecone Action.

Immediate action was required, since farmers were using several pesticides including those with the very toxic chlordecone. As part of the Guadeloupean identity, gardening is a strong cultural element, but it is under strong market pressure. Therefore, often without knowing it, farmers -forced by real estate agencies on allotments- were seduced to use heavy toxic and carcinogenic pesticides. As a result, people with regular consumption of food (bananas, citrus, etc.) from their polluted gardens are suffering from diseases. Chlordecone has

been forbidden in France since 1990 but was sold to Guadeloupe and Martinique until 1993. It is very persistent and can still be found in large quantities in soil and groundwater, stretching across the entire food chain, including fish.

The special JAFA action and communication program has been established to reduce the exposure of the population to chlordecone via changing habits of supply and self-consumption of animal and vegetable products from private allotment gardens. Via the program, door-to-door surveys were carried out with all households living in potentially polluted areas, leading to 10,500 household surveys, 2,560 gardens analyzed, with ca. 950 assessed as strongly overexposed.

A strong communication program, aimed at prevention and protecting health and the environment, has since developed successfully. Engaging support from individuals and communities has been a crucial factor to achieve this. As a result, most of the land has been reappropriated, improved management of potential food pollution takes place, alternative farming techniques are emerging, healthy and accessible food is grown, and more shared gardens are in use. From an absolute disaster, the JAFA community approach has shown to be an opportunity for the start of a change -innovation- contributing to the health and well-being of the people of Guadeloupe in multiple areas.

Source: Nestor, 2018

d. Organize Community Competitions

Another way to involve the community in new developments is to challenge them and other stakeholders via competitions. The local government can choose to initiate its own competition, like on "who has the best idea for a sustainable neighbourhood?", or choose to support a competition initiated by industries, SMEs, local science institutes, etc. The awards do not necessarily have to include high-cost premium prizes. Often the honour of winning is significant enough to drive participation. Since nowadays so many competitions are on national television shows, like "The Best Idea of ...." and "Design and Entrepreneurship Competitions" it might be worthwhile to look at their formulas as well, to create a "Best Idea of Island X", or a student/young entrepreneurs competition with support of local media, etc.

REGIONAL ENTREPRENEURSHIP COMPETITION

This competition, promoted by the Vice-Presidency of the Government of the Azores and developed by SDEA (Azores Business Development Society, EPER), aims to stimulate entrepreneurship, creativity and entrepreneurial behavior. The purpose is the creation of businesses in Azores stemming from projects in the competition. The Regional Entrepreneurship Competition takes place in three phases, allowing the business ideas presented in the first phase to enter into a process of development and consolidation, with the objective of ensuring the transposition of the winning projects into business initiatives.

The submitted ideas are evaluated by a jury that selects the best business concepts for a second phase. In the second phase, competitors receive specific training and consulting to enable the transformation of the ideas into effective business plans. The business plans are then submitted to a selection process by the jury in order to determine the three winning projects. The winners receive a monetary prize, these amounts are only granted on the condition that they become part of the companies' capital stock and are used in the development of the selected business.

Source: DRAE Acores - EU Islands Project

TEXEL BIG DAY

Once a year on the island of Texel, a 24-hour competition takes place for mainland and island birding groups. The goal is to explore the island by bike and identify as many bird species as possible within 24 hours. It is a sponsored event, which takes place annually on the second weekend of May. The event receives approximately €15,000 in funding from sponsors which is made available to the local Texel birding organization.

The money is subsequently invested into conservation activities to help protect the island's endangered bird species like beach plovers, house martins, etc. The initiators and drivers of the competition are local organizations, foresters, as well as National Park Texel, including the regional and island municipality.

Source: beleefdewaddennatuur.nl

Image 20 - Birding groups discover the island's species during the Texel Big Day event

SELF ASSESSMENT
COMMUNITY INVOLVEMENT

Q1 Who do you define as the community on your island? Do you have (aside from the regular democratic representation) influential groups, like village committees, branch organizations, or other special interest groups?

Q2 What has the "community potential" contributed so far on the island with respect to innovation?

Q3 How has the local government (LG) stimulated the community to contribute? Give your score (mark between 1-10) for the LG activities so far.

Q4 Particularly, to what extent has LG used the TIPPING Strategies 5a - 5d?

Q5 In your opinion: for what projects and how could LG stimulate the "community potential" to make a higher contribution?

At what ambition level? Give your score for the future- and for which 2-4 innovation projects should the LG aim for in cooperation with the community?

RESULTS

Score to date: ☐

Future ambition score: ☐

PROJECTS

1 ☐

2 ☐

3 ☐

4 ☐

5a. Create a Challenging Vision
5b. Working with the UN SDGs (Sustainable Development Goals)
5c. Communicate for Acceptance (E = C x A)
5d. Organize Community Competitions

STRATEGY 6
CROWD CO-DESIGN

We use the following notions in this strategy, aimed at stimulating crowd co-design.

Crowd (a)
visitors, various types of tourists (holiday, professional, academic);

Tourism and recreation
from mass to eco-/nature tourism to nano-tourism;

Crowd (b)
also contributors and sponsors from the mainland (like mainland members of an island's nature, sports -golf, hiking, cycling etc.- and culinairy experience groups, born islanders living on the mainland, etc.)

Crowd co-design is a powerful strategy for local and regional policy makers to create a fly-wheel effect. Amongst other strategies, they can achieve this by:

6A Stimulate Innovation-driven Events and Festivals

6B Foster Experiments through Nano-tourism

6C Involve Visitors as Innovation Ambassadors

a. Stimulate Innovation-driven Events and Festivals

Events and festivals which aim to further develop or showcase innovations are a great tool for stimulating sustainable development. They encourage people to gather together, exchange ideas, and can even be used as a test ground for up-and-coming technologies and/or sustainable services. Furthermore, events can be strategically dated to attract visitors to the island during the off-season, which can lead to more secure employment opportunities for those within the hospitality and tourism sectors.

Image 21 - Young enthusiasts gathering for a local innovation event

Image 22 - A vibrant piece of art exhibited during Ameland Art Month

AMELAND ART MONTH

The Month of Art on Ameland is a cultural highlight with an island-wide exposition where the sea literally marks the border. One of the reasons for organizing the festival is to prolong the tourism season by including the extra month of November. At the festival more than 100 artists exhibit their work, selected by the Month of Art Foundation Ameland. The participating artists are mainly from Northern European countries, such as Sweden, Denmark, Germany, The Netherlands, and Iceland.

Source: Kunstmaand Ameland - kunstmaandameland.com

INNOFEST

Eight festivals in the northern part of the Netherlands, including festivals on the islands of Vlieland and Terschelling, offer students and start-ups the possibility to test their sustainable product or service prototypes. In this way, hundreds of feedback comments and user product-interaction experiences can be gained in a few days, accelerating the innovation process.

Source: Innofest - innofest.co

b. Foster Experiments through Nano-tourism

Nano-tourism can realize best or next practices within crowd co-design:

> Nano-tourism is a new, constructed term describing a creative critique to the current environmental, social, and economic downsides of conventional tourism, as a participatory, locally oriented, bottom-up alternative. …. It operates as a social tool to stimulate mutual interaction between the provider and user by co-creation or exchange of knowledge. It is not about scale but is a projected ability to construct responsible experiences from the bottom-up, using local resources. Nano-tourism is beyond tourism, it is more an attitude to improve specific everyday environments and to open up new local economies.

Sources: Nanotourism - nanotourism.org
and, Simons & Hamer (2019)

SPORT DIVERS AS WASTE COLLECTORS

On a weekend in September 2019, sport divers have collected 2,500 kilos of waste from the North Sea. At least five hundred kilos comes from containers that were thrown overboard in January from the cargo ship MSC Zoe. The Dive the North Sea Clean Foundation announced the results.

Divers found about five hundred kilos of clothing, kitchenware, travel suitcases, rugs, toys and car parts on shipwrecks and artificial reefs.

Waste from the MSC Zoe was found on every wreck between Ameland and Schiermonnikoog. Some 2,000 kilos of fishing nets were also removed from the water. Fish, lobsters and crabs can get caught in these nets.

This example is a good showcase of nano tourism, where the visitors while exercising their sport at the same time help to clean up the islands' surroundings and deliver a positive contribution.

Source: Duikdenoordzeeschoon - duikdenoordzeeschoon.nl

Image 23 - Waste-collecting sport divers from the Dive North Sea Clean Foundation

GREEN VI

Green VI is a not-for-profit waste management and community development organization in the British Virgin Islands. In response to the country's lack of adequate recycling program, Green VI developed an innovative way to deal with glass waste streams. Beautiful blown glass artwork is created from a nearby hotel's empty glass bottles left over from the restaurant and bar operations.

The glass-blowing art studio uses left over french-fry oil from restaurant operations to heat kilns which melt empty alcohol bottles, which artisans use to create beautiful blown glass artwork that is intern sold back to visitors. This innovative solution adds value to waste and sends it home with tourists. Green VI is currently developing an exciting new project to make even more use of local waste streams. They will design, test, and implement an anaerobic digester, which will convert sewage, organic waste, and potentially even sargassum (which has been troubling the Caribbean in recent years) into methane for the glass studio's furnace. This, along with a new and better suited location will allow Green VI to process larger quantities.

While the initiative is not currently large enough to handle the amount of glass imported to the islands, it represents the exact type of thinking required to foster creativity and sustainability through nano-tourism.

Sources: Lewtas, 2017and Green VI greenvi.org / photo courtesy of Green VI

c. Involve visitors as innovation ambassadors

Visitors can be regular island guests but also people who are on the island for just a music festival or an academic conference. Visitors and former inhabitants from the island are the ambassadors of new developments "par excellence."

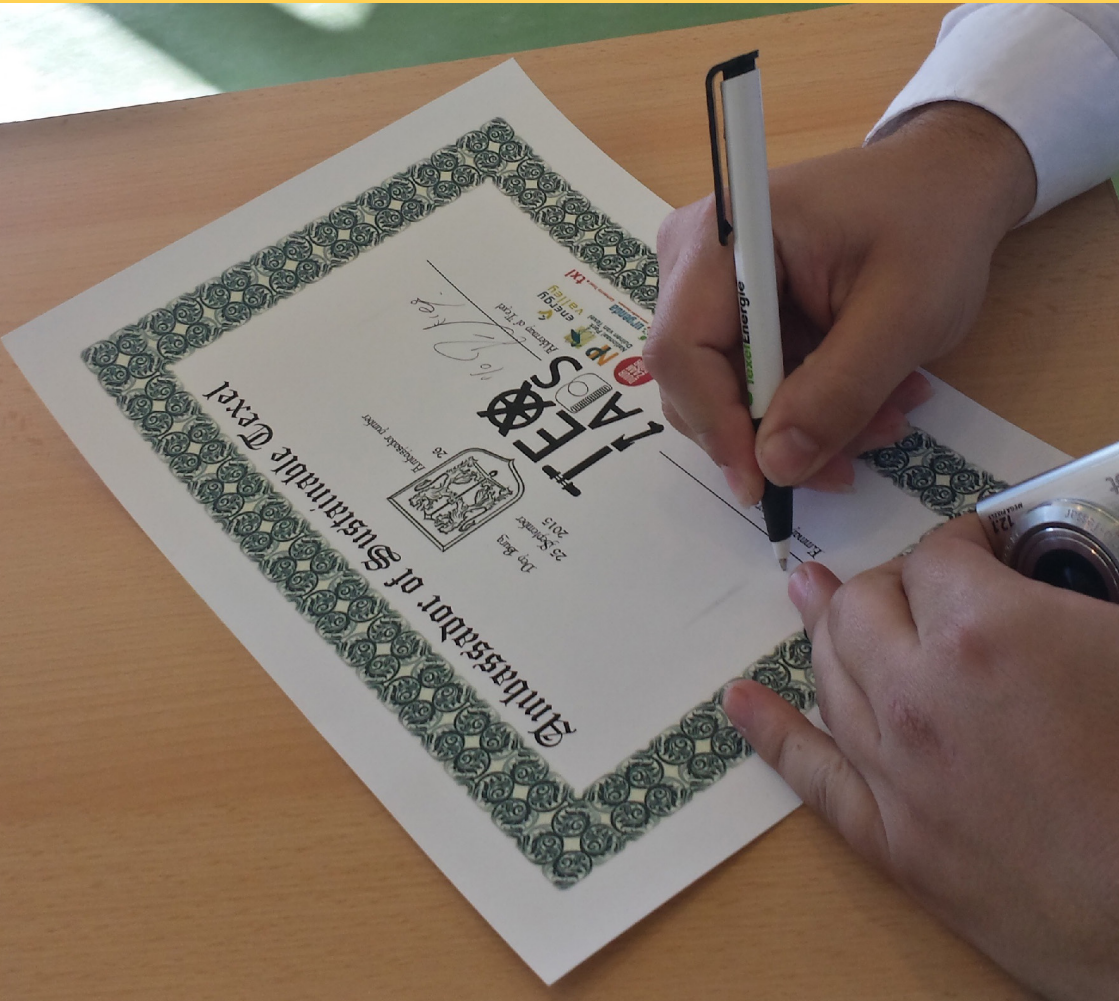
Image 24 - Blown glass starfish from recycled alchocol bottles at Cane Garden Bay, BVI

TEXLABS CERTIFICATES

TexLabs, Texel's creative network organization run by industrial designer Pepijn Lyklema, organizes several times a year group visits of higher educational and research institutes to the island, involving hundreds of students and staff members. In order to keep an enduring recollection and a positive evaluation of the contribution of their study work on and for the island, students and staff receive a "Ambassadorship" certificate, signed by Texel's Vice Mayor.

Source: Texlabs, 2018.

Image 25 - Signing of an Ambassador of Sustainable Texel certificate



SELF ASSESSMENT
CROWD CO-DESIGN

Q1 Who do you define as the "crowd" (visitors, etc.) on your island?

Q2 What have they contributed so far on the island with respect to innovation?

Q3 How has the local government (LG) stimulated the crowd to contribute? Give your score (mark between 1-10) for the LG activities so far.

Q4 Particularly, to what extent has LG used the TIPPING Strategies 6a, 6b and 6c?

Q5 In your opinion: for what projects and how could LG stimulate the actors of the crowd to make a higher contribution?

At what ambition level? Give your score for the future- and for which 2-4 innovation projects should LG aim for in cooperation with the crowd?

RESULTS

Score to date: ☐

Future ambition score: ☐

PROJECTS

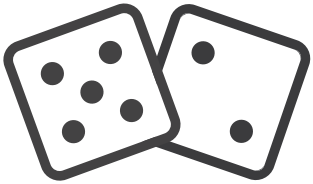
1 ☐

2 ☐

3 ☐

4 ☐

6a. Stimulate Innovation-driven Events and Festivals
6b. Foster Experiments through Nano-tourism
6c. Involve Visitors as Innovation Ambassadors



STRATEGY 7
SPECIAL INSTITUTIONAL ARRANGEMENTS

Several strategies for municipalities and regions exist to create special institutional arrangements that can foster innovation on islands. Often, larger mainland stakeholders i.e. industries will be involved. Islands can profit from their advanced technologies, products and services, but must be -and usually are- aware of the need to "keep the island in their own hands." Setting the boundaries and keeping control of joint developments are essential, in order not to sell out precious culture and nature.

We distinguish here the following options:

7A Special Programs with Large Companies

7B Political Entrance for the Creative Industry

7C Special Regional Arrangements

a. Special Programs with Large Companies

In pioneering islands' practices, we can also find approaches in which large companies successfully test their new, sustainable technologies with island experiments. Often, the testing involves a crucial role with respect to the user experience, as well as learning trajectories for island engineers, installers, and other technical disciplines as early adopters.

A frequently applied approach to innovation development for larger companies is the 'probing and learning' approach; a term first coined by Lynn et al. (1996). Probing and learning implies conducting experiments in real markets with immature versions of the products, i.e. "probing alternative markets with early versions of the products, learning from the probes, and probing

again (Lynn et al., 1996)." With a better understanding, firms might iterate again and again, i.e. engage in a process of 'successive approximation' until they arrive at a winning product-market configuration. The goal of probing is not to "get it right the first time," but rather to maximize learning. According to Hellman (2007), the probing process is particularly effective when there are multiple applications and markets to choose from.

Islands can offer larger companies an experimentation place, to probe and learn from the potentialities of new technologies. Relevant areas could be energy- and water sufficiency, sustainable agriculture and fisheries, air observation, marine food development, biobased (sea-) resources, sustainable tourism and nature protection.

AMELAND ENERGY COVENANT

In order to stimulate energy transition experiments on the island and to move towards the goal of energy-independence for the mainland, building on the own renewable energy sources, the Municipality of Ameland has undertaken a number of ambitious steps. Firstly, it stimulated the establishment of the Ameland Energie Coöperatie (Ameland Energy Cooperation), in which the municipality and the individual inhabitants of the island hold the majority of the shares. As a next step, an energy covenant with leading stakeholders from the mainland has been signed, offering them a serious probing and learning experimental opportunity on the island. Parties involved are: Eneco (Energy Company), Gasterra (Leading Gas Research Institute of the Netherlands), Philips (Electronics), TNO Applied Research Institute, Hanze Polytechnic (Groningen), Liander (Energiegrid Manager), and the Hanze Polytechnic Entrance Lab, which can be considered the main lab in the phase, before larger scale experimentation with the new energy technologies will take place.

Under the auspices of the Ameland Energy Covenant, amongst others the following pioneer projects have been introduced on the island for larger scale testing:

- The creation of the local Ameland smart energy net;
- Solar Park Ballum, in principle producing sufficient electricity -not daily power- for all households on the island throughout the year;
- Sustainable –LED-based- smart indoor and outdoor lighting;
- Diversified, smart electricity production from a mix of sources: natural gas fuel cells, solar production, hybrid heat pumps, green gas heat pumps, combined heat-power systems, etc.;
- Public transport on green gas.

The parties involved follow a "probing and learning" approach in which the Hanze Polytechnic as well as its partner the University of Groningen (both on the mainland) have an important contribution in helping to design the probes and learn from the results. The municipality of Ameland has an active and leading role in the Covenant and its' future, in the coordination of the projects as well in continuously providing opportunities for the subsequent experimentation, including the flexibility and support of the users/inhabitants.

Source: AEC - amelandenergie.nl

b. Political Entrance for the Creative Industry

A study on the creative industry -arts & crafts, designers, architects etc.- in rural areas (NL, Fryslan period 2012-2018) shows that networks of the emerging new creative businesses hardly have entrance to the local political arena. Usually, the established industries (agriculture, tourism, small industries) are dominant in these circles. As a consequence, many initiatives which are crucial for longer-term innovation, particularly in remote areas like islands, won't get the necessary support and stimulation. Therefore, local and regional policy makers should be aware of this dilemma, and give the creative industry in the regions, not yet as well organized as the established branches, extra opportunities for communication and political engagement and response.

Source: S.Celik Dissertation (2018, TU Delft)

CREATIVE COUNCIL NORTHERN NETHERLANDS

The Provinces of Fryslan, Drenthe and Groningen have established a special "Creative Council Northern Netherlands" to guarantee a better representation of the creative industry in the political process. Also, this council can organize special creative industry events and facilitate its branch members with finding appropriate funding options for innovation projects.

Source: Creative Council Northern Netherlands - ccnn.eu

c. Special Regional Arrangements

In pioneering islands' practices, we can also find approaches in which large companies successfully test their new, sustainable technologies with island experiments. Often, the testing involves a crucial role with respect to the user experience, as well as learning trajectories for island engineers, installers, and other technical disciplines as early adopters.

WATER SPECIALIZATION FOR REGIONAL DEVELOPMENT

In 1997 the Fryslan region decided to select "Water" as specialization for its innovation development. With a leading role for the government (Province) and various drinking water and water treatment companies in the network, including links to outside scientific institutes, in 1999 the Water Society was established.

In 2000, the experimental "Water Campus" was created including the regional polytechnics. From 2003 on an own university-level science institute, WETSUS -now European water centre of excellence- became an important stakeholder in the network. Today ca. 120 members, mostly smaller companies, are part of the "Water Alliance" of Fryslan. Starting with a budget of € 10.000 in 1999, the accumulated turnover of the whole network is now € 400 Million and fastly growing, with WETSUS as scientific R&D nucleus.

In hindsight, the Province of Fryslan has not only played an essential role in initiating the development, co-creating the network, active facilitating in funding and lobbying, but also maintaining an active cooperation attitude over the longer term, to make "Water" a programmatic Frisian innovation success. The Frisian Wadden Islands (Vlieland, Terschelling, Ameland and Schiermonnikoog) are relevant testbeds for the various innovations in the water technology area, as active co-providers of pioneer tourist- and event-related markets. For instance the Munipality of Schiermonnikoog cooperates closely with Vitens water company on the island, in realising a solar power park for all Vitens pumps and other installations. Moreover, with the establishment of the UN Climate Adaptation institute at the Fryslan Campus of the University of Groningen, further water related testbed projects are expected.

Sources:

Schiermonnikoog - schiermonnikoog.nl

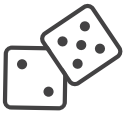
University College Fryslan - rug.nl

MADEIRA M-ITI

The Madeira Interactive Technologies Institute (M-ITI) is a non-profit innovation institute of the University of Madeira, the youngest and smallest public university in Portugal.
M-ITI operates in the interdisciplinary domain of Human-Computer Interaction (HCI) encapsulating contributions from the disciplines of Computer Science, Psychology and Social Sciences, and Design, with the goal of engaging in important scientific and technological challenges. M-ITI aims to expand understanding of human experience and interactive technologies through basic and applied research that is responsive to manifest real-world needs using multi-disciplinary collaboration drawing on a variety of perspectives.

Source: M-ITI (m-iti.org).

Image 26 - Aerial photo of the island of Madeira



SELF ASSESSMENT
SPECIAL INSTITUTIONAL ARRANGEMENTS

Q1 What do you define as special institutional arrangements relevant for innovation on your island?

Q2 What have they contributed so far on the island with respect to innovation?

Q3 How has the local government (LG) initiated and facilitated the use of special institutional arrangements to contribute to innovation? Give your score (mark between 1-10) for the LG activities so far.

Q4 Particularly, to what extent has LG used the TIPPING Strategies 7a, 7b and 7c?

Q5 In your opinion: for what projects and how could LG stimulate the special institutional arrangements to contribute at a higher level?

At what ambition level? Give your score for the future- and for which 2-4 innovation projects should LG aim for via special institutional arrangements?

RESULTS

Score to date: ☐

Future ambition score: ☐

PROJECTS

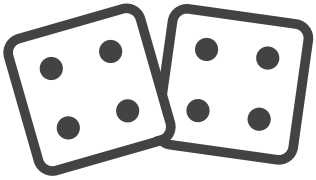
1 ☐

2 ☐

3 ☐

4 ☐

7a. Special Programs with Large Companies
7b. Political Entrance for the Creative Industry
7c. Special Regional Arrangements



STRATEGY 8 INNOVATION POLICY FITNESS

The potential success of the application of the TIPPING Wheel for governance of innovation depends strongly on the motivation and willingness of policy makers and implementers to think out-of-the box and adapt their regular policy instrument mix via a more open-innovation-oriented probing and learning approach.

Based on a literature review and the practical experiences of Islands of Innovation, at least three options to enlarge what we would define as "Innovation Policy Fitness" exist:

8A Prior History Awareness

8B Climate for Local Innovation and Ambition

8C Action Program Design

a. Prior History Awareness

In each situation, the local & regional policy makers and managers have to take into account the prior history and special pre-conditions, which play a role on the island (Rogers, 2003. Mazzucato, 2018. Boschma, 2015). For instance, when it comes to a sustainable energy transition, some islands with nature parks and high fluxes of bird migration, might be strongly opposed to energy generation via large wind-turbines, while others are in favor of this option. It is important to study these elements, since the success of the TIPPING approach is dependent on a focus on such issues and solution directions, which potentially are at least open for discussion for the involved island stakeholder groups.

Boschma states:

> *History is key to understand how regions develop new growth path, as its past not only sets limits but also provides opportunities for making new combinations and diversifying into new pathways.*

A historic exploration, a SWOT analysis, or further building on the outcomes of a smart specialization strategy might deliver relevant data to see where local government challenges and focus could be aimed at in the context of a specific island.

b. Climate for Local Innovation and Ambition

A central element in the TIPPING Approach is the conviction that today's complex and unsecure innovation field requires a modern and step-by-step mix of evolving policy instruments. In that vision, cooperation, learning and probing, and facilitation are key policy concepts, where traditional regulation, legislation, and R&D subsidies alone are no longer sufficient.

Compared to the traditional approach of taking winners and sectors as starting point, the modern instrument mix starts with challenges, "willers" and is mission-oriented. Moreover, instead of the initiation and execution of various more or less loose projects, a programmatic approach is considered essential, building a systematic knowledge position and -as local or regional government- helping to strengthen the regional innovation eco-infrastructure. In such a program, series of projects are well designed as systematic knowledge building blocks, allowing improvisation and flexibility, while planning via an active system of "reflective practice."

Therefore, it is important to create a climate for local innovation and the ambition for continuous probing and learning with respect to the governance instrument mix.

Figure 6 - Innovation MIX

Innovation Mix - Competitiveness
VIS-À-VIS Complexity & Risk Dealing

LOW (traditional, control)	HIGH (cooperation, learing & probing)
• Project hopping	• Program/ framework
• Picking winners	• Cumulative knowledge & fostering innovation infrastructure
• Ex-post monitoring	• Working with "willers" or challenges
• Director	• Reflective practice
• Sector approach	• Partner
• Standard policy (legislation, regulation, r&d funding)	• Mission-oriented
	• Evaluating policy mix

Source: Adapted from Teisman (2007).

RIS3 AÇORES

The Research and Innovation Smart Specialisation Strategy, RIS3 Açores, aims to implement a model of economic development based on knowledge and innovation, for the improvement of regional effectiveness and competitiveness and to consequently reach a higher level of employment.

RIS3 Açores focuses the regional investment in three strategic areas, namely:

- Agriculture, livestock and agribusiness;
- Fisheries and sea; and
- Tourism.

A good practice on strategy 8 "the pre-conditions and prior history in the innovation" is the practical case of operationalization of RIS3 Açores following a multilevel approach. The establishment of the multilevel governance structure in the innovation model aims to increase the interaction between key innovation actors, namely the public sector, academia, business community and civil society. This organizational model is composed of an Executive Commission, Regional Innovation Council and RIS3 Thematic Working Groups.

They are oriented by a good governance principle of representative participation. This principle is applied by the RIS3 Açores using the methodology of "collaborative leadership" that implies involving the stakeholders on the decision process according to their skills and knowledge. The main contribution of this good practice is the intense interactive innovation model between the multiple actors at regional, national, and European levels, in order to share experiences and good practices for the production of regional innovation.

Source: DRAE Acores - Island of Innovation

c. Action Program Design

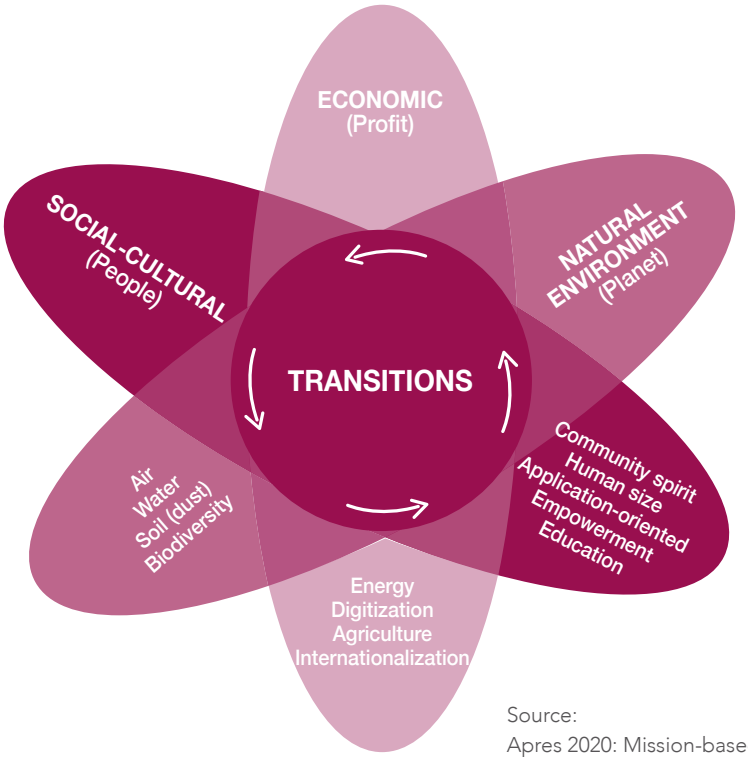
Obviously, the innovation policy of islands has its normal standard requirements like proper resources (personnel, means, etc.), planning, and projects. However, instead of the initiation and execution of various more or less loose projects, TIPPING considers a programmatic approach essential, building a systematic knowledge position and -as local or regional government- helping to strengthen the regional innovation eco-infrastructure. In such a program, series of projects are well designed as systematic knowledge building blocks, allowing improvisation and flexibility, while planning takes place via an active system of "reflective practice."

FRYSLAN ACTION PLAN

In the 'Guide for Action Plan Preparation for Islands of Innovation' different steps have been indicated to develop an innovation action plan as a program.

See: interregeurope.eu/islandsofinnovation

Figure 7 - Fryslan Action Plan Flower



Source:
Apres 2020: Mission-based innovation in the Northern-Netherlands, Tijsma (2018).

Action Plan for the Province of Fryslân (NL)
(Outline version d.d. September 2019)

In Fryslan this has resulted in the following policy process and preliminary action plan:

Policy Instrument:

OP Noord –Operational Programme North-Netherlands / Northern Innovation Agenda 2014-2020

Policy Context:

OP Noord promotes innovation and entrepreneurship in the context of societal challenges like climate change, health, food security, water, energy. It stimulates participative innovation and living labs to establish the region as a test bed for innovation. Through the Islands of Innovation project, the province of Fryslân wants to position the Frisian Wadden islands as living labs for sustainable innovation, building on their specific characteristics as isolated, self-supporting natural communities. The islands are located on the northern coast of The Netherlands in a vulnerable intertidal zone listed as UNESCO World Heritage List. The small island communities are facing population decline and brain drain, poor accessibility, limited health and education services and strong dependency on tourism. There's a lack of policy initiative to capitalise on the potential strengths of these islands as self-supporting, independent and creative communities with unique craftmanship and skills in a great natural environment. We propose a cross-sectoral, creative approach to utilise these strengths in a structural way. By approaching whole island communities as a living lab and bringing together entrepreneurs and other stakeholders in innovation projects we aim to boost economic development for the islands.

Policy Learning Process:

The international learning sessions, study visits, good practice exchanges and joint analysis work in Islands of Innovation have all contributed to the development of the regional action plan for Fryslân. This policy learning has been an organic, iterative process. Rather than identifying good practices that can be introduced to our region on a 1-to-1 basis, we have taken bits and pieces of inspiration from every encounter in the project.

THE ACTION PLAN

Based on the needs and opportunities of the islands and the inspiration from the partners, we will implement three actions:

1. The Matrix Table

A seed-money facility (€ 300.000) to accelerate new projects for OP Noord. This facility has been introduced at the initiative of the province and will be further refined in the coming years (type of change to policy instrument: improved governance).

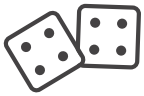
2. Vliehouse

Pilot project to demonstrate the technical feasibility of making temporary, movable housing units using bio-based materials and local resources on the islands (seaweed, sand, grass) in cooperation between local stakeholders. The project will be delivered with financial support from OP Noord. (type of change to policy instrument: new projects)

3. Mission-based Regional Development Approach

Introducing a mission-based approach in cooperation with the Managing Authority of the OP Noord. This will improve implementation of the current OP and inform the strategy of the new OP 2021-2027 (type of change to policy instrument: structural/strategy improvement).

Source: Popma, T. & Tijsma, S. Team Europe, 2019



SELF ASSESSMENT

Innovation Policy Fitness

Q1 So far, how active has the local & regional government (L&RG) on your island been in initiating, facilitating, and stimulating innovation?

Q2 Particularly, have they considered building on prior history and island strengths?

Q3 How has the L&RG stimulated the application of modern policy instrument mixes and a program, like suggested in Strategies 8a and 8c? Give your score (mark between 1-10) for the innovation policy fitness of your local/regional government so far.

Q4 Particularly, to what extent could L&RG improve the use of the TIPPING Strategies 8b and 8c to achieve a higher policy fitness?

Q5 At what ambition level -give your score for the future- and for which 2-4 projects should L&RG aim for innovation with respect for their fitness/modernization of the innovation policy instrument mix

RESULTS

Score to date: ☐

Future ambition score: ☐

PROJECTS

1 ☐

2 ☐

3 ☐

4 ☐

8a. Prior History Awareness
8b. Climate for Local Innovation and Ambition
8c. Action Program Design

7 Automatic Scoring with Website Support

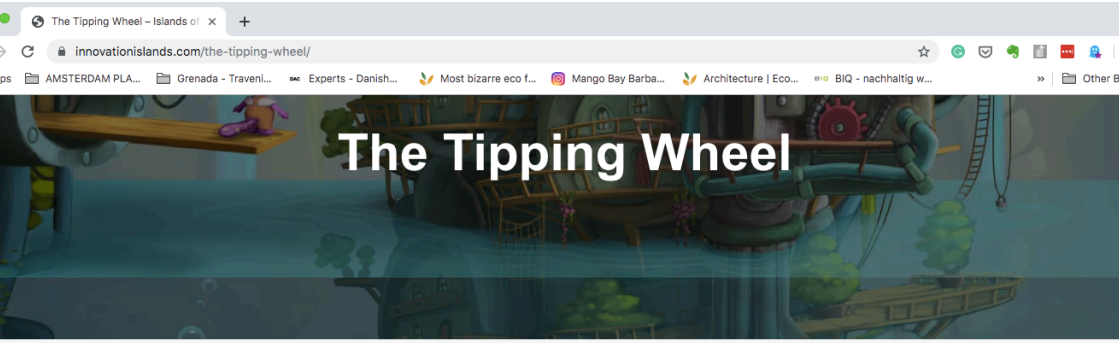
In order to present of the workshop discussion in the TIPPING Wheel, to compare today's scores with those of the desired future (5-10 years), a copy of page 20 with a 'clean' TIPPING Wheel from this Guide or an own larger hand-drawn wheel on a flip chart can be used by each discussion table. In close connection, formal and informal notes answering the Tipping questions, should be kept for the record in each sub session, as essential elements for presentation of the results in the plenary meeting and for the final report and action plan.

In addition, it is also possible to create the final, overall score card by means of the Islands-of-Innovation TIPPING Website.

To do so, please follow the next steps:

1. Go to the Website:

   innovationislands.com/the-tipping-wheel



PROGRESS

Innovation Policy Fitness

The potential success of the application of the TIPPING Wheel for governance of innovation depends strongly on the motivation and willingness of policy makers and implementers to think out-of-the box and adapt their regular policy instrument mix via a more open innovation oriented, probing and learning approach.

Based on literature review and the practical experiences on the Islands of Innovation at least three options to enlarge what we would define as "Innovation Policy Fitness" exist:

2. Per TIPPING Strategy, fill in the scores of your group discussion (either during, or at the end of the brainstorm).

c. Program Design

Obviously, innovation policy by islands has its normal standard requirements like proper resources (personnel, means etc.), planning and projects. However, instead of the initiation and execution of various more or less loose projects, TIPPING considers a programmatic approach essential, building a systematic knowledge position and -as local or regional government- helping to strengthen the regional innovation eco-infrastructure. In such a program, series of projects are well designed as systematic knowledge building blocks, allowing improvisation and flexibility, while planning takes place via an active system of "reflective practice". The co-development of the Water Program of the Province of Fryslan is a good example of this approach.

Results Innovation Policy Fitness in your case?

Score till Today

1 2 3 4 5 6 7 8 9 10

Future ambition Score

1 2 3 4 5 6 7 8 9 10

Forward

3. After you have filled in all 8 strategies, you can present the overall TIPPING scores on your computer screen and -if you want- also print them.

8 Workshop Results, TIPPING Report & Action Plan

Usually, each workshop is documented in a small report, as new input to the innovation policy process, leading to new action plans or an enrichment of the existing ones.

Here we present two examples of TIPPING Workshops results and their first-order effect on the policy innovation process.

TIPPING APPLICATION AZORES

Fields: Agriculture, Fisheries and Tourism.

Azores organised a stakeholders group meeting with the purpose to test and use the TIPPING Wheel methodology in the policy-making analysis. Based on the Quadruple Helix Approach, 40 participants from 22 entities were engaged in this workshop. The involved entities covered enterprises, non-governmental organizations, socio-cultural associations related with solidarity economics, departments of the University of the Azores, and other local departments of public administration.

The workshop included a speaker's session where experts on innovation generated discussion and launched questions. Furthermore, the workshop included a round with thematic working groups (WG) according to the three strategic areas defined under the Research and Innovation Smart Specialisation Strategy, RIS3 Açores, namely:

Agriculture and Agribusiness (WG1)

Fisheries and Sea (WG2)

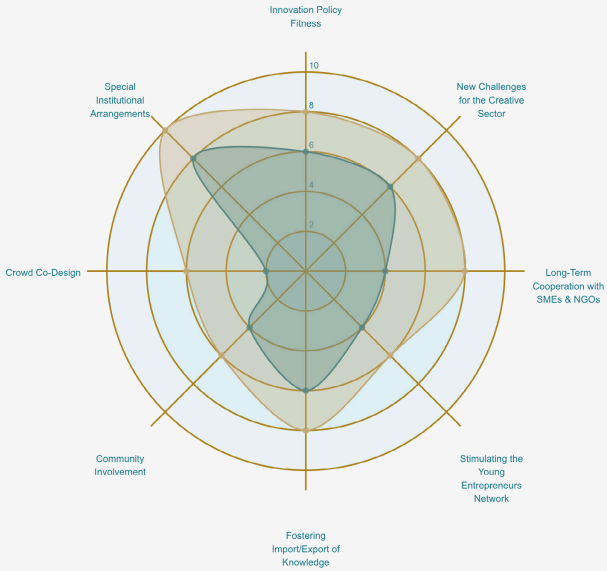
Tourism (WG3).

During this session the WG's analysis the innovation policy performance regarding the Present and Future perspective.

As an example of the dynamic of the discussion, here are the results of the TW from the Agriculture and Agribusiness Working Group (WG1).

Figure 8 - TIPPING Wheel

Generated after discussions of the Agriculture and Agribusiness working group.



Contents of the TIPPING Wheel:

1. Working with the Creative Sector
2. Long-term Cooperation with SMEs and NGOs
3. Stimulating the Young Entrepreneurial Actors Network
4. Foster the Import & Export of Knowledge
5. Community Involvement
6. Crowd Co-Design
7. Special Institutional Arrangements
8 Pre-Conditions and Prior History (Innovation Policy Fitness)

As a last step of this analysis, after the workshop the Azorean team crossed the results of each WG TIPPING Wheel and presented a unique and final TIPPING Wheel, representing the weight of the RIS3 Açores areas in the regional innovation policy landscape.

Figure 9 - TIPPING Wheel

Representation of the regional innovation policy.

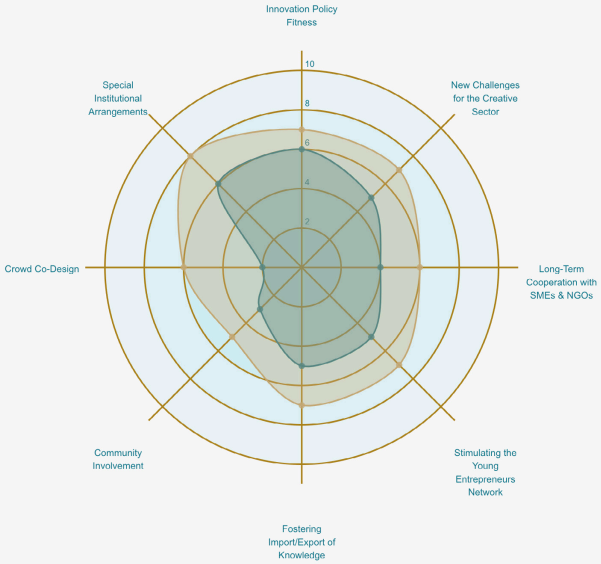


Image 27 - Photo inspired by TIPPING Application on fictitous Eagle Island

TIPPING APPLICATION ON EAGLE ISLAND

Field: Energy Transition

The second example is from an existing island and real-life exercise with the TIPPING Wheel, but for confidentiality reasons the name of the island and the municipality cannot be revealed. Therefore, the fictitious names of Eagle Island and one of its villages, the Municipality of Bouschbacher have been used in place.

Several steps have been undertaken to prepare for the workshop session:

- Telephone and Skype meetings with the environmental department of the Bouschbacher municipality;

a “grey literature” review, consisting of various memo’s and reports on energy policy and potential renewable energy projects on the island, as well as a basic island data report on demographics, culture, housing, education, agriculture, industry, etc.; and

a review of earlier TIPPING Wheel exercises on Samsœ, Ameland and Texel (NL) and the Azores.

Looking at the energy use/capita, Bouschbacher is comparable to the energy consumption of many other regular islands with the same characteristics: growing tourism, an ageing population, a relevant agricultural sector, a large service sector and special nature resorts.

In addition, the literature on decarbonization mentions that the region, Eagle Island, has set ambitious goals for the energy transition:

> (1) to be fossil free in 2030, including all sectors; and
>
> (2) particularly for the transport sector, both for personal and freight transport, to be 100% based on renewables by 2020.

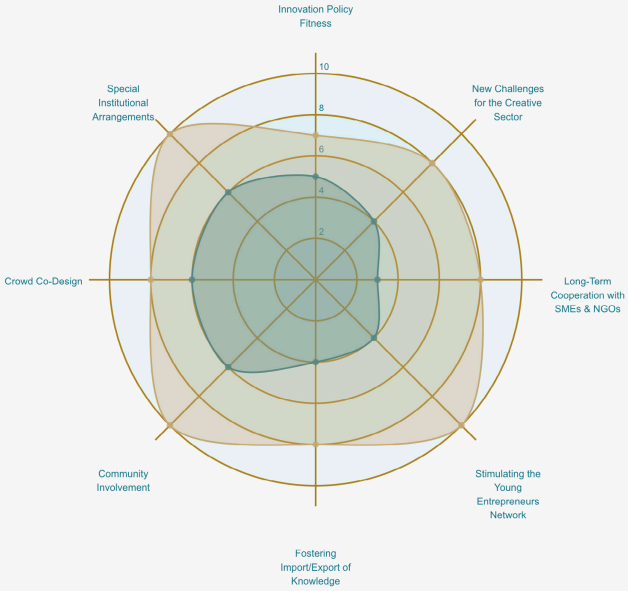
The municipalities on Eagle Island endorse these goals. Bouschbacher has the even more ambitious goal of being completely decarbonized by 2025.

TIPPING facilitators Brezet and Tijsma also acted as moderators of this part of the workshop, joined by Islands of Innovation specialist Mr. Soeren Hermansen (Director Energy Academy, Samsoe Island, Denmark).

The self-assessment questions included in each strategy of the wheel were answered by each group during a 2-hour session, including a score for the position to date and the desired score in five years. The scores of each group were further explained by the rapporteur of each group. The subject of each score is: the extent to which the local or regional government makes use of its governance potential to co-lead, cooperate in, support, facilitate, accelerate, and effectuate local innovation. Ten is the highest score possible, zero the lowest.

Figure 10 - Results

The results of the scores given by each group in the workshop, and adjusted after a plenary feedback-session with all participants.



The results of Figure 1 indicate that the participants have the following perception of the existing local/regional governments' energy innovation policy (small 'zebra circle').

Five strategies (S) receive an insufficient score (3-5):

(S1) the involvement of the creative sector;
(S2) the cooperation with SMEs and NGOs;
(S3) the stimulation of young entrepreneurs;
(S4) the fostering of import and export of knowledge;
(S8) innovation policy fitness.

Sufficient scores (6) are for:

(S5) community involvement;
(S6) crowd co-design;
(S7) special institutional arrangements

These scores are relatively self-critical and low, compared to other sessions in the Islands of Innovation project. The scores for the near future (bigger 'circle' in the figure), on the other hand show high aspiration levels. All strategies have the ambition to become very good (score 8) to excellent (score 10). The only exception is the innovation policy fitness of the municipality, which scores a 7.

In the discussion it was revealed that many participants assumed that with the existing resources for the energy transition team, consisting of one person and a part-time assistant, a full effectuation of the ambitious other strategies would be not completely realistic, which explains this less ambitious score.

The overall ambition and aspiration of all participants in the Eagle Island workshop is to move from a rather low overall TIPPING Score profile to a highly ambitious one. This requires a redesign of the municipality's resources for the sustainable transition. It was obvious to the majority of the participants that more personnel and resources on the Bouschbacher Municipality sustainable transition team are needed to execute an intensified -energy, water- transition action program (integrating existing plans), based on the consensus outcomes of the TIPPING workshop.

This challenge has been further endorsed and elaborated in a subsequent workshop and discussion contribution of Mr. Soeren Hermansen of Samsoe Island.

The following gives an overview of the projects which were envisaged by the participants, as part of a larger program, for the execution of each TIPPING Strategy.

Challenges Creative Sector:

1.Special communication project with the creative sector
2.Dialog project
3.Formulation of joint project proposals

Cooperation with SMEs & NGOs:

1.New Biogas plant, plus bus depot and gas filling, also for cars
2.Smart water supply for tourists, companies and households

Young Entrepreneurs Network

1.Biogas production plant
2.Involve young people in nature inclusive, modern farming and local produce
3.Special project to stimulate young people to stay on the island
4.Cooperation with local university: courses, theses, joint research projects etc.
5.Local innovation award competition for young entrepreneurs

Import & Export of Knowledge

1.Extended cooperation via the Triple Helix – action plan for how and with defined role for the participants
2.Extension of the municipality transition team (personnel, resources)
3.Public event on sustainability

Community Involvement

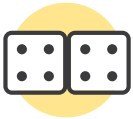
1.Innovation education stimulation, starting at school
2.Joint process for localization of the new biogas plant
3.Creating support from the inhabitants for a fossil free future
4.Involvement of the local universities with MSc, PhD knowledge etc.

Crowd Co-Design

1.Involve tourists, half-year residents, nearby students in local development
2.Involve the local population in the biogas transition
3.Structure the municipality communication on renewable energy

Special Institutional Arrangements

1.Learning from existing successes
2.Biogas production plant



Innovation Policy Fitness

1.Water Innovation: rainwater; desalination; re-use; re-use sludge = also biogas
2.Biogas plant: localization and financing
3.Organize intake-point/office for creative ideas of citizens

The project ideas of Table 1 were shared and discussed at face value in an overall session with all participants. The following conclusions can be drawn:

- Particularly the introduction of a new biogas plant into the energy system is high on the agenda and mentioned in most strategies;
- The participants have adopted a holistic view on the energy transition challenge: the need to innovate the water system as well as the industry and agricultural sector are mentioned in close connection;
- The need to create much stronger ties with local universities and involve BSc-,MSc-, PhD-students and university staff projects in the islands' transition program is also often mentioned;

Due to the amount, variety and size of the suggested projects and ideas, a follow-up session will be needed to sort out priorities, make combinations, draft an overall program and get appropriate resources for its effectuation.

Image 28 - A hopeful future for islands

9 Policy Implications & Next Steps

When effectuating the results of TIPPING Workshops various approaches do exist. Recommendations and recipes for innovation programs at small communities could be quite different from larger cities on islands or islands groups.

However, when applied bottom-up, small communities could also be seen as "the atomic nuclei of innovation". Engaged in larger systems with other "innovative atoms", transitions within larger entities and for society as a whole can be energized starting via these basic units.

Likewise, the TIPPING Approach is very much embedded in "best practices and next practices" thinking and doing, starting from the bottom-up perspective. It already has been mentioned that the availability of resources (people, budget, knowledge etc.) is considered a crucial 'conditio sine qua non' for the implementation process and further action plan.

Image 29 - Next steps for island-innovation and policy development

However, as a caveat, in close connection, TIPPING practitioners advise to design and effectuate such an action plan not as a linear execution process of single projects, but as a growing and flourishing program, including the following principles.

Source: S. Hermansen, Samsoe

- The 'WHY' principle which comes first, and is the basis for a 'dream' – for instance jobs for all young people to be combined with activation of a growing and greying tourist population on certain islands could lead to an unexpected synergy, and a new inspiring vision;
- Then the involved municipality can suggest the 'WHAT' Mission, which has a strong correlation with the 'dream';
- The 'HOW' is defined by the people – joint leadership and joint own responsibility are key assets in the transition process;
- The organization of informal meetings, the creation of small project preparation budgets and choosing promising new talent instead of existing successful entrepreneurs are other key elements for a local/regional government which aims at 'joint transition leadership'.

These steps fit well within the Islands of Innovation Model as sketched at the beginning of this Guide. Following the 'Guide for Action Plan Preparation for Islands of Innovation' can help to formalize the outcomes in terms of a document ready for governance processing.

Go to:

Islands of Innovation
interregeurope.eu/islandsofinnovation

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ABOUT THE PROJECT

European island regions face several challenges: loss of population, isolation, vulnerable environments and limited economic activity, which is often small scale and focuses on few economic sectors, such as agriculture and tourism, due to the island regions' territorial characteristics. One of the largest threats islands faces, is the loss of population due to limited work opportunities, especially the young people and talent. However, the islands have their advantages compared to mainland: they have to be more self-reliant, with stronger community involvement and isolation situation that can trigger innovations and provide a distinct, resourceful environment for experimental implementation of innovations.

Therefore, insular regions in this project want to address the opportunities of diversification of their economies by improving their innovation policies. Our project focus is to investigate and improve public policy measures in order to turn the islands into innovation "test-beds": islands as innovation-promoting, experimental "probing and learning" environment which can keep and attract young, innovative and entrepreneurial people and activities to the islands. This will be done through policy improvement, learning sessions, action plan development, good practice identification and sharing and active work on the islands with involvement of regional stakeholder groups. The project will collect and disseminate the knowledge gained in good practice directory and innovation guide for island regions.
The project partnership consists of geographical islands or island regions/archipelagoes from The Netherlands, Denmark, Portugal, Estonia, France and Greece.


Samsø
Saaremaa
Fryslân
Azores
Lesvos
Madeira
Guadeloupe
Islands of
Innovation

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Simon Tijsma

With a background as Economist (MSc.) educated at the RUG University of Groningen, Simon Tijsma's career has been developing along a policy innovation trajectory, being 'an entrepreneur' in public service office. For many years he was leading the Department of Economic Affairs and Tourism of the Province of Fryslan (NL) as well as innovation advisor to the North Sea Commission. Today Tijsma is program manager sustainable innovation at the Province of Fryslan. His work focus is especially oriented on the process of creating new ideas, concepts and networks and other forms of national and international cooperation. Within the new networks, the quadruple helix is an essential element, including the active participation of SMEs, governments of the different levels (local – international), educational institutes and NGOs. The development of the Frisian "WaterCampus" is a good example of one of the projects, in which the public entrepreneurship and network approach of Tijsma have been applied with great success. In today's regional sustainable innovation program of the Province of Fryslan, he is active in a broad array of fields, including energy, water, care, land use, arts and tourism. Finally, Simon contributed actively and with success to the winning-bid process of Leeuwarden/Fryslan European Cultural Capital 2018.

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TIPPING GUIDE

The TIPPING Guide and Wheel can be used for the assessment of an islands' innovation regional and local governance, aimed at activities like:

- making an overall benchmark between islands or parts of an island;
- comparing the status quo and a desired future: 'the dream';
- focussing on innovation for a specific challenge, sector, or aspect benchmark (energy, materials, water, transport, agriculture, circular economy, tourism, emerging technology sectors, creative industry etc.);
- the creation of a basis and inspiration for a comprehensive new -or to be renewed-policy program with a special thematic focus and engaging-oriented projects;
- the facilitation of innovation and creative team building for municipalities and regions;
- functioning as a supportive tool -a "dancefloor"- for policy innovation brainstorms.

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