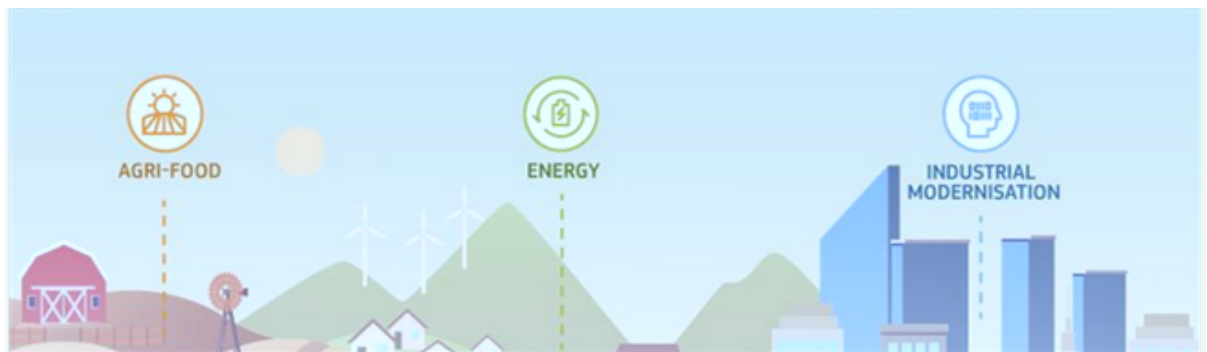


Thematic Smart Specialisation Platforms Monitoring Progress Report

Fields marked with * are mandatory.



Thematic Smart Specialisation Partnership Monitoring Progress Report

This report is presented to the relevant Working/Steering Committee.

The report is updated every six months.

Confidentiality:

The management report (section I) and progress report (section II) will be made available to the public via your Partnership's web page.

The part on self-assessment is confidential.

Based on the monitoring results, the European Commission will decide on the following term's support.

* Reporting period

July - December 2020

* Please select the name of your partnership

Bio-economy

*** Start date of your partnership**

2016

*** Partnership's webpage**

<https://www.s3vanguardinitiative.eu/cooperations/bio-economy-interregional-cooperation-innovative-use-non-food-biomass>

I. Management report

*** Please provide the executive summary and the objectives of your partnership**

Thematic webinars and matchmaking events organisation contributed to increasing new partnerships on the biobased sector and business plan implementation, resulting in 5 partnering international events, gathering over 300 innovators from companies and European scientific community of 20 regions. The activity brought to light a new demo-case focused on biopolymers production and applications formally launched in June during the Biopolymers stakeholder webinar, and the creating 5 public-private partnerships involving over 50 entities currently involved in Green Deal calls proposal preparation. Furthermore, the Pilot increase networking by participation as an exhibitor at the 28th European Biomass Conference & Exhibition e-EUBCE 2020, in which several 1to1 meetings engaged global expert in the biobased sector.

Enhancing the most advanced partnerships and industrial models represents a pivotal activity of the Bioeconomy Pilot. Business development support primarily aimed at implementing the SMBio-LNG business plan under the Technical Assistance Facility (TAF) service to empower the partnership in attracting private capitals and validate a model able to be replicated across VI regions. The case is led by a Lombard company, a leader in the Italian panorama of industrial transport and logistics, committed to validating a supply chain for the production, distribution and sale of the liquefied biomethane. Furthermore, the SMBio-LNG was granted a TAF service extension to design a feasibility study for SMBio-LNG business model replicability in Slovenia region, by involving one of the major companies in the bioenergy sector. Main findings of this activity have been discussed during the webinar and partnering event "Fast-moving toward the New Green Deal" organised by the Pilot in September 2020.

Triggering new cross-regional circular economy alliances to maximise the impact of the biobased business models has been primarily carried out based on a Memorandum of Understanding with the Bio-Based Industry Consortium. Cooperation activity was resulted in developing a Biobased platform of regions focused on stimulating bio-based investments by connecting regions and industries. Up to now, over 50 EU regions, including 13 Bioeconomy Pilot members were involved in the implementation of platform data about bio-based feedstock availability and relevance of sector at the local level. A continuous engagement action ensures the participation of all VI members by 2020.

The bioaromatics demo-case devote the major effort on industrial upscaling of pilot facilities, Thematic Smart Specialisation Platform business plan and increasing the VI regions participation. Two new pilot installations for the coproduction of BTX (benzene, toluene and xylene) through the gasification of biomass (Pettern, Randstad region) and for the thermochemical depolymerisation of lignin in combination with stepwise condensation (Bergen op Zoom, Randstad region) were commissioned.

The lignocellulosic biorefinery demo-case increased the partnership participation focused on using (natural) fibres for materials for various construction and infrastructure applications. The Chaplin program increased the commitment of lignin producers, bitumen and asphalt formulators, road construction companies, municipalities, provinces and national infrastructure board.

In the biofuels demo-case, SMBio-LNG business plan on the biomethane supply chain has been delivered and disseminated among regional stakeholders and investors. The plant launched in December 2020 by SMBio-LNG is the first in Italy to produce liquefied biomethane and carbon dioxide from the recovery of livestock effluents and agricultural by-products. From today, therefore, the 50 heavy vehicles of the Maganetti group will be fueled with a renewable advanced biofuel, from an environmental point of view, currently available on the market, eliminating CO₂ emissions and drastically reducing local pollutants (-70% NO_x and - 99% fine dust) compared to diesel-powered vehicles. Two demonstration plants in the Emilia-Romagna region, have also been validated by Herambiente and IRETI based on converting urban waste and wastewater sludge into biogas and then, liquified biomethane.

In the biopolymers demo-case, the business model's design for polyester and polyurethane-based synthetic leather from agricultural waste is undergoing, and additional uses cases were evaluated as a potential part of the demos' ecosystem.

*** Please provide the list of leading regions**

Lombard
Randstad / Zuid Holland

*** Please provide the list of participating regions.**

If possible, please follow this format: "Name of the region in English (Country abbreviation), NUTS code".

e.g.: Lapland (FI), FI1D7

Basque Country (ES) ES21
Lombardy (IT) ITC4
Navarra (ES) ES22
Randstad / Zuid Holland (NT) NL41
Upper Austria
East and North Finland
Lower Austria
North Rhein Westfalia
Saxony-Anhalt Värmland
Emilia-Romagna (IT) ITH5
Lower Saxony
South Netherlands
Scotland
Wales
Flanders
Małopolska
Piedmont (IT) ITC1
Slovenia

Please provide the list of interested regions or other entities (other than national /regional authorities)

Please provide an overview of the **working areas** of your partnership

	Working area	Region in charge	Involved regions	Other actors
* 1	Bio-aromatics	Flanders	Lower Austria; Upper Austria; North-Rhine Westphalia; Emilia-Romagna; South Netherlands; Slovenia; Piedmont; Randstad /South Netherlands; Slovenia; Basque Country; Navarra; Varmland; Scotland; Wales; Lombardy	Lombardy; Estonia; Brandenburg; Saxony; Saxony-Anhalt; Hungary Helsinki-Uusimaa
* 2	Lignocellulosic biorefinery	Randstad	Scotland; Wales: Flanders, Slovenia; Lombardy	Lombardy
* 3	Liquified Bio-methane (LNG Blue Corridor)	Emilia-Romagna; Lombardy	North Rhine Westphalia; Piedmont; Upper Austria	Slovenia;
* 4	Biopolymers	Lombardy	Wales, Randstad, Slovenia, Maloposka, North-Rein Wetsfalia	Wales
* 5	/	/	/	/
* 6	/	/	/	/
* 7	/	/	/	/
* 8	/	/	/	/
* 9	/	/	/	/

* 10	/	/	/	/
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Please provide information regarding past meetings, workshops and dissemination activities (six months prior to filling out the survey)

	Event	Date	Place	Any other information
1	BIOPOLYMERS STAKEHOLDERS MEETING. THEMATIC WEBINAR AND PARTNERING EVENT	June 18 2020	online	
2	28TH EUROPEAN BIOMASS CONFERENCE & EXHIBITION	July 6-9 2020	online	
3	FAST-MOVING TOWARD THE NEW GREEN DEAL. THEMATIC WEBINAR AND PARTNERING EVENT	September 22 2020	online	
4	THE ITALIAN CHEMICAL INDUSTRY EMBRACES GREEN CHEMISTRY. INTERNATIONAL CONFERENCE	October 28 2020	online	
5	International Forum on Industrial Biotechnology & Bioeconomy	October 2-3	Rome	
6	Smart Specialisation Workshop; sharing Power4Bio regional experiences towards new period 2021-2030	September 18	online	
7				
8				
9				

10				
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Please provide information regarding planned future meetings, workshops and dissemination activities

	Event	Date	Place	Any other information
1	Bioeconomy Dialogue. Sustainable bioproducts for feed, fashion and textile for the development of the circular economy in the Alpine Space	January 20, 2021	online	
2	Supporting the access of CEE stakeholders to cross-border and trans-national networks	February 4, 2021	online	
3	Alpine Policy Forum. Transnational dialogue on the circular biobased economy in the Alpine Space	February 16, 2021	online	
4	Bioinitaly 2021. Investment Forum	March 2021	online	
5				
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II. Progress report

Innovative results

Please describe innovative results and achievements that could be attributed to the partnership (specific examples of results vs. objectives)

1. Matchmaking & Partnering event organisation.
 - Biopolymers stakeholders meeting. Thematic webinar and partnering event, June 18 2020. 80 attendees from 13 countries, 4 advanced use-cases selected as part of the new demo-case for biopolymers production.
 - 28th European biomass conference & exhibition, July 6-9 2020. Pilot's booth and 1to1 meeting organisation.
 - Fast-moving toward the new green deal. Thematic webinar and partnering event, September 22 2020. 50 attendees from 8 regions, dissemination of the SMBio-LNG business plan implementation, business models strategy exchange on biofuels production
 - The Italian chemical industry embraces green chemistry. International conference, October 28 2020. 200 attendees.
2. Business Plan design and development.
 - Implementation and delivery of SMBio-LNG use-case business plan under the Technical Assistance Facility support (TAF)
 - Mapping the biomethane landscape in Europe and design the first draft of the Transregional Replicability Plan
 - Starting on design a feasibility study for SMBio-LNG business model replicability in Slovenia
 - Implementation of the Thematic Smart Specialisation Platform business plan and increasing the VI regions participation in Lignovalue pilot plant for bioaromatics production
3. Business Plan design. Support for setting up an advanced business model for polyester and polyurethane-based synthetic leather from agricultural waste.
4. Selection of 43 advanced business models across 8 Vanguard regions. Identification of promising industrials models for the production of biopolymers and biocomposites for several applications in medical, textiles, automotive, food packaging and sustainable construction fields.
5. A new demo case on biopolymers production has been initiated. The demo involves four advanced use-case based on applications (medical application and fashion) and raw material supply (PLA from food waste and lignin-derived) leading by Lombardy, Malopolska, Wales and The South Netherland and engaging additional 10 VI regions.
6. Demonstrating the large-scale viability of biobased products obtained via thermochemical conversion of biomass to bio-aromatics. Two new pilot installations for the coproduction of BTX (benzene, toluene and xylene) through the gasification of biomass (Pettern, Randstad region) and for the thermochemical depolymerisation of lignin in combination with stepwise condensation (Bergen of Zoom, Randstad region) were commissioned.
7. Placing on the market of a new plant for biomethane production from the recovery of livestock effluents and agricultural by-products, as well as a connected truck-filling station (the SMBio-LNG use-case led by Lombardy, Piedmont, and Emilia-Romagna regions) and two demonstration plants in Emilia-Romagna region on converting urban waste and wastewater sludge into biogas and then, liquified biomethane.
8. Trigger interregional cooperation through public event participation and organisation (20 European public events gathering several funded projects of the bioeconomy area).
9. More than 3,200 people reached via digital communication campaigns, 50 SMEs, 10 EU economy clusters/agencies, 15 university/research centres were directly involved in the demo-cases activities, and participated in the organised public events.

Main Pilot's deviations from the Action Plan due to the COVID-19 emergency, mainly affected the organisation of matchmaking events and participation in partnering workshops, which have to be postponed in 2021. Initiatives affected by the current situation are listed below:

- Matchmaking - Bioeconomy development in Eu regions. Opportunity for Lombardy, Flanders, Wallonia growth (Milan March 12, 2020)
- Matchmaking - Natural Fibertastic 2020 (Bergen Op Zoom April 15-16, 2020)
- Matchmaking - National Bioeconomy Day (Milan, May 28 2020)
- Matchmaking – Industrial Green Chemistry business models workshop (Milan, February 26 2020)
- Partnering - IDEA Innovation Dream Engineering award (Milan, February 18 2020)
- Partnering - Trøndelag Bioeconomy Region Initiative and bioeconomy hotspot tour in the Trøndelag region (Trondheim, March 19-20 2020)
- Ecomondo (Rimini, November 2020)
- Biorizon – Bioeconomy Pilot partnering event (December 2020)

Tangible short- and medium-term socio-economic impacts achieved or expected (specific examples)

Demonstrating a profitable way for the market exploitation of the most promising bio-based applications has driven the Pilot's demo-cases' majority of the effort. In the bioaromatics field, the engineering and construction of a lignin depolymerisation pilot plant (LignoValue) is currently in scaling-up phase expected to produce 250 kg/day of functional renewable several high added-value applications (polymers, adhesives, coatings, composites). This facility should be operational by mid-2021. In the lignocellulosic biorefinery fields, the Chaplin Program for the production of lignin-based bitumen is gathering several companies' pledge across the VI members. Thermochemical conversion of biomass to bio-aromatics

The development of technology and applications based on pyrolysis and biomass gasification and other recycled flows are key themes of the demo. Two new pilot installations for the coproduction of BTX (benzene, toluene and xylene) through the gasification of biomass (Pettern, Randstad region) and for the thermochemical depolymerisation of lignin in combination with stepwise condensation (Bergen of Zoom, Randstad region) were commissioned. Moreover, in the context of a Biopolymers demo-case, the Pilot is currently contributing to the design of the business model for the selected new use-case to produce polyester and polyurethane-based synthetic leather from agricultural waste. Moreover, during 2020, the Lignocellulosic biorefinery demo case under the coordination of the Biobased Delta (Netherland) mapped of the most promising business models, resulting in a selection of 50 projects belonging in 8 areas of interest, such as Bio-asphalt (addressing the further upscaling of the two existing projects), Polyurethane, Bioplastics & Biomaterials, Biorefinery, Bioaromatics, Pyrolysis and gasifications, Sugars, Biowastes in high-added-value products.

Inter-regional and inter-partnership collaborative results

Additional results obtained from working with other partnerships under the thematic S3 Platforms (specific examples)

Learning and sharing best practices on sustainable business models across the VI members is a crucial pillar of the Bioeconomy Pilot.

Maximising the impact of the biobased sector at regional and interregional level triggered seven collaborative initiatives were initiated by the Pilot bringing together some relevant EU actors on bioeconomy field, such as the Bio-based Industry Consortium, the European Bioeconomy Network, the European Chemical Regions Network and several BBI and Interreg projects (Biomonitor, Power4Bio, AlpLinBioEco, ARDIA-Net).

Moreover, the Pilot and the Biobased Industry Consortium - BIC and the Bioeconomy Pilot have resulted in the Biobased platform of regions focused on stimulating bio-based investments by connecting regions and industries. Cooperation activity has resulted in developing a Biobased platform of regions focused on stimulating bio-based investments by connecting regions and industries. Up to now, over 50 EU regions, including 13 Bioeconomy Pilot members were involved in the implementation of platform data about bio-based feedstock availability and relevance of sector at the local level. A continuous engagement action ensures the participation of all VI members by 2020.

Evaluation of the involvement of relevant business sector (clusters, SMEs, business associations, chambers of commerce, Digital Innovation Hubs (DIHs), etcetera) in the Partnership activities (specific examples)

Connecting relevant expert and key industries actors on the biobased sector has brought to light a new demo-case focused on biopolymers production formally launched during the Biopolymers stakeholder webinar (June 18, 2020) which has involved 80 attendees from 13 countries and stimulate active industrial participation. Visibility and networking have been supported by the Pilot participation as an exhibitor at the 28th European Biomass Conference & Exhibition e-EUBCE 2020, in which several 1to1 meetings have been organised engaging global expert in the biobased sector. Connecting experts, policymakers, companies and investors and facilitating the business models' financial sustainability belonging to the Pilot is a priority that governs all communication activities. The Bioeconomy Pilot initiated 4 matchmaking events in 2020, involving over 300 attendees from 20 European regions to trigger business models' strategy exchanging and disseminating the SMBio-LNG business plan findings. Through the organisation and participation in events, the Pilot stimulates partnerships to support the most promising ideas and attract public and private investments. During the second half of 2020, this activity facilitated creating 5 public-private partnerships involving over 50 entities in Europe who are currently involved in preparing proposals in response to the Green Deal calls

Evaluation of whether the level of inter-regional cooperation is sufficient to potentially provide practical and relevant socio-economic impacts (specific examples)

Mapping the most promising business models across the Vanguard regions has resulted in 43 advanced industrial cases across 8 Vanguard regions to produce biocomposites for several applications in medical, textiles, automotive, food packaging and sustainable construction fields.

New activities

Involvement of regions from EU13 Member States in the Partnership, in particular with respect to scoping, mapping and/or matchmaking. In addition, justification should be provided if no EU13 regions are involved

The Bioeconomy Pilot dedicated a significant effort in 2020 to prepare the business plan of the SMBio-LNG use-case, successfully selected for the TAF (Technical Assistance Facility) service.

The Pilot worked on drafting the document focused on the description to potential investors of the regulatory framework, the current liquefied biomethane market, its production, distribution and sale. Based on this document, potential new investors and biogas producers can consider replicating the business model experience in their own context. The Business Plan or Feasibility Plan provides an in-depth and complete assessment of the business idea's opportunities and risks. The model considers the investment of the construction of a filling station distributing a mix of LNG and Bio-LNG. The current model boundary does not include production and upgrade of the fuel, but it is intimately linked to it, as it is based on a 10 years contract for 2000 t/year supply at a fixed price.

This translates into a substantial de-risking of the investment for the production and upgrade facility.

The main essential elements are:

- National legislative framework. The study aims to describe the regulatory framework of the production, distribution, and use of liquefied biomethane and the panorama of incentives connected with biomethane production in Italy.
- Analysis of the market and competitive landscape of freight transport. The study offers a global overview of the usage of Compressed Natural Gas (CNG), Liquefied Natural Gas (LNG), Electric mobility (e-mobility) and Hydrogen mobility (H2-mobility) to measure the strategic positioning of SMBIO-LNG. This section contains general considerations valid throughout the European scenario, plus specific regional and national ones which shall be updated to any new national context.
- Analysis of competitor and the value proposition. The study describes the consumption of biomethane, the presence of LNG distribution plants and a comparative analysis of the main 7 competitors in the logistics sector, aiming to define the value proposition and revenues of the SMBIO-LNG model. This section contains general considerations valid throughout the European scenario, plus specific regional and national ones which shall be updated to any new national context.
- Risk analysis and financial-economic forecasts. Financial operational, financial, operational and strategic risks are explored to identify, measure, monitor, and mitigate possible business hurdles. The analysis of management and mitigation of the risk, based on the evolution of the model of Enterprise Risk Management (ERM) will allow the Maganetti Spedizioni Spa to estimate effectively and efficiently the management of the conditions of uncertainty and the relative risks and opportunities, resulting in the possibility of safeguarding or creating value. This section contains general considerations valid throughout the European scenario, plus specific regional and national ones which shall be updated to any new national context

Involvement of regions/countries from outside of EU28 Countries. (Number of participants from non-EU countries (specify their contribution))

Towards commercialising and market updating of new promising application, the Pilot devoted special effort to implementing the SMBio-LNG business plan under the Technical Assistance Facility TAF service with the general aim to empower the partnership in attracting private capitals and validate a model able to be replicated across VI regions.

The SMBio-LNG business plan use-case is belonging in the Liquefied natural gas demo-case. It is led by the Lombard company Maganetti Spedizioni Spa, a leader in the Italian panorama of industrial transport and logistics, committed to validating a supply chain for the production, distribution and sale of liquefied biomethane. Maganetti Spedizioni Spa is the first Italian company and one of the first in Europe, to use liquefied biomethane of non-fossil origin, locally produced and not imported. A new plant for biogas production and subsequent biomethane liquefaction and a liquefied biomethane filling station has been inaugurated and has become operational atin December 2020.

In bioaromatics production field, in 2020 the demo-case devoted particular effort in Thematic Smart Specialisation Platform business plan implementation and increasing the VI regions participation. This business plan addresses challenges to contribute to the abatement of climate change effects from the built environment. The partnership on bioeconomy will produce bio-aromatics as building blocks for crucial applications by the construction industry. These new and sustainable building blocks can outperform and replace fossil-based counterparts in crucial applications. Replacing fossil-based compounds will reduce CO2 emissions, and bio-based products in long-term applications can act as carbon sinks.

Advancement and promotion of the Partnership through publications and other communication/outreach activities (number of outreach activities that resulted from the partnership)

During 2020, several promotional campaigns have been designed to increase visibility and participation of the VI regions in the Pilot's activities. More than 5,000 people have been reached via digital communication campaigns, 50 SMEs, 10 EU economy clusters/agencies, 15 university/research centres were directly involved in the demo-cases activities and participated in the public events.

About 50% of stakeholder reached and convert to the Vanguard website come from Italy (35% Lombardy, Piedmont, Emilia-Romagna regions), France (10% Pay de la Loire), The Netherland (10% Randstad), and Spain (25% Navarra, Catalunya, Castilla-Leon), the remain audience is distributed among 15 regions with a predominance of Italy, Poland, Portugal, Slovenia, Denmark, Finland countries.

During 2020, the Pilot attends several public events by providing a state of implementation and main relevant achievements.

The Pilot has participated in 26 European events dedicated to deepening sustainable business models in the bioeconomy sector (demo-cases and flagship), international conferences, webinars, workshops and matchmaking devoted to partnerships creating. Presentations dedicated to the most significant results also included insights into public-private financial integration models to unlocked the regional industrial potential and attracted private investors' interest.

Activities and projects with partnerships working under other S3 Thematic Platforms (AgriFood, Energy and Industrial Modernisation)

In Horizon III, Biorizon co-initiator VITO targets technology development for the isolation, depolymerisation, and fractionation of the lignin fraction of biomass into bio-aromatics. This program targets aromatics with new functionalities that lead to improved product properties.

Lignin, the largest natural source of aromatic compounds, is known as a complex material, from which it is difficult to split off separate bio-aromatics. This makes its incorporation into applications difficult. In 2020, the Lignin Horizon demonstrated that lignin's homogenisation into fractions helps make applications, such as polyurethane (PU), much easier to accomplish. Other applications, for example, relate to adhesives, mastics, coatings and elastomers. Various partners have since started working on application development. However, samples of lignin oil are still only being produced on a small scale (approx 100 grams). There is a need for larger volumes, and this is why an innovative pilot installation is being developed capable of producing samples on a kilogram scale. VITO is now scaling up a unique conversion technology to produce lignin-based building blocks for the fine chemical industry and innovative biorefineries. VITO started the engineering and construction of a lignin depolymerisation pilot plant (LignoValue), which will produce functionalised renewable bio-aromatics used in different high added-value applications (polymers, adhesives, coatings, composites, etc.). This facility will deliver about 250 kg/day of functional renewable bio-aromatics and should be operational by 2021. These amounts of renewable bio-aromatics allow the industry to apply these samples within their pilot facility in order to conduct application testing on a large scale. There are promising applications for these novels, renewable bio-aromatics in the fine chemical and polymer industries.







Your Partnership and the UN 2030 Sustainable Development Goals (SDGs)

The EU has a strong position when it comes to sustainable development and is also fully committed to be a frontrunner in implementing the UN's 2030 Agenda, together with its member countries and regions. Many interregional partnerships under the thematic S3 Platforms contribute strongly to the attainment of these 17 goals.

Please indicate to which Sustainable Development Goals and to what extent your thematic Partnership contributes?

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Not applicable
Goal 1. End poverty in all its forms everywhere	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Goal 2. End hunger, achieve food security and improved nutrition & promote sustainable agriculture	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Goal 3. Ensure healthy lives & promote well-being for all at all ages	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Goal 5. Achieve gender equality & empower all women and girls	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Goal 6. Ensure availability and sustainable management of water and sanitation for all	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment & decent work for all	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialisation & foster innovation	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Goal 10. Reduce inequality within and among countries	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Goal 11. Make cities & human settlements inclusive, safe, resilient and sustainable	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Goal 12. Ensure sustainable consumption & production patterns	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Goal 13. Take urgent action to combat climate change and its impacts	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Goal 14. Conserve and sustainably use the oceans, seas & marine resources for sustainable development	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation and halt biodiversity loss	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Goal 16. Promote peaceful & inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels						
Goal 17. Strengthen the means of implementation and revitalise the Global Partnership for Sustainable Development	