PANACEA
Non Food Crops for a EU Bioeconomy

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Task 3.1

D3.1 Mapping capacities and establishment of the PANACEA 'Multi-actor forum'

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THIS PROJECT HAS RECEIVED FUNDING FROM THE **EUROPEAN UNION'S HORIZON 2020 RESEARCH AND INNOVATION PROGRAMME** UNDER GRANT AGREEMENT N. **773501**

Contents

Introduction

PANACEA aims to set up a thematic network that will foster the effective exchange between research, industry, and the farming community, so that direct applicable solutions are widely disseminated, and grassroots level needs and innovative ideas are thoroughly captured, in order to design the penetration path of non-food crops into European agriculture.

Aim: The main aim of this task is to build an interactive forum which will be actively involved in the project activities at both national and European level. This forum is expected to facilitate in capturing and spreading innovative ideas on non-food crops (NFCs).

What is multi-actor forum?

The PANACEA project employs a multi actor approach to establish well-structured and engaging multi-actor forums in each participating country.

The multi-actor forum consists of:

- seven highly qualified scientists covering the whole production chain of NFCs (see Table 1); and
- an extensive list of relevant stakeholders/actors from science and research, industries and businesses, government and extension services, policy makers and agricultural practices (see Annex II extensive list of stakeholders).

Table 1: Scientific team of the PANACEA Multi-actor forum

Name	Affiliation	Expertise
Melvyn Askew	Census Bio, United Kingdom	UK Expert on non -food crops Coordinator of IENICA network
Spyros Kyritsis	Agricultural University of Athens, Greece	Expert Vice-President of Hellenic Agricultural Academy
Salvatore Luciano	University of Catania, Italy	Expert on non-food crops, Coordinator of OPTIMA project
Iris Lewandowski	University of Hohenheim, Germany	Expert on non-food crops, Coordinator of OPTIMISC project
Benoit Gabrielle	INRA, France	Expert on non-food crops, Coordinator of LOGISTEC project
Theofanis Gemtos	University of Thessaly, Greece	Expert on non-food crops, Department of Agriculture Crop Production and Rural Environment
Nils Rettenmaier	ifeu, Germany	Expert on sustainability of non-food crops

Methodology

During the research work in PANACEA, the word stakeholders is defined as:

'an individual or an institution with an interest or influence in sharing information and transfer of knowledge generated through research and innovation on non-food crops (NFCs).

The PANACEA multi actor forum will be analysed based on the principles of the quadruple helix approach[1,2,3,4] which beyond the 'triple helix' components of university, industry and government also recognises the important role of the society[5],[6] in the process of sustainable development of knowledge.

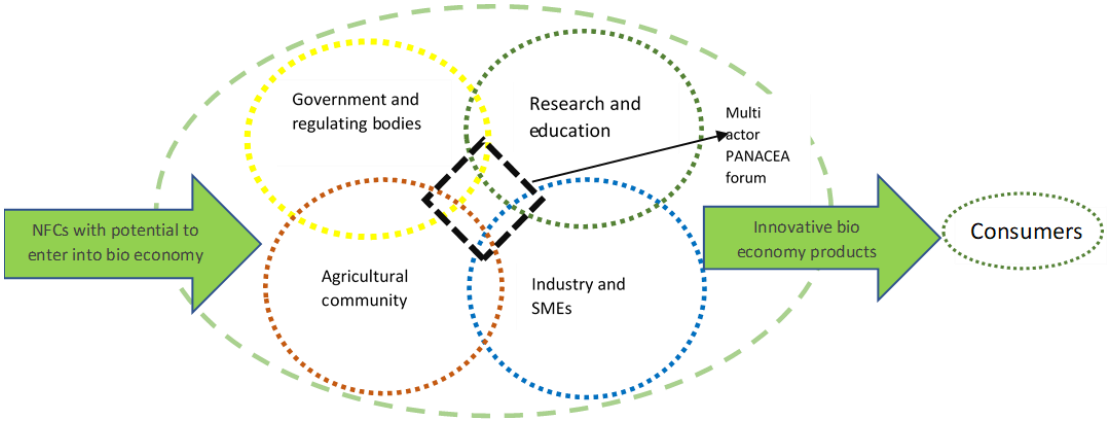

Figure 1 Quadruple helix model of PANACEA multi actor forum

1 Carayannis E. G. and Campbell D. F. J. (2009), Mode 3 and 'Quadruple Helix': toward a 21st century fractal innovation ecosystem, International Journal of Technology Management, 46 (3), 201-234.

2 Carayannis E. G. and Campbell D. F. J. (2010), Triple Helix, Quadruple Helix and Quintuple Helix and how do knowledge, innovation and the environment relate to each other? A proposed framework for a trans-disciplinary analysis of sustainable development and social ecology, International Journal of Social Ecology and Sustainable Development 2010, 1(1):41–69.

3 Yawson R. M. (2009), The Ecological System of Innovation: A New Architectural Framework for a Functional Evidence-Based Platform for Science and Innovation Policy, The Future of Innovation Proceedings of the XXIV ISPIM 2009 Conference, Vienna, Austria, June 21–24, 2009.

4 Carayannis et al. Journal of Innovation and Entrepreneurship 2012, 1:2 http://www.innovation-entrepreneurship.com/content/1/1/2

5 Bhattacharya, C., Sen, S., Korschun, D., 2011. Leveraging Corporate Social Responsibility: The Stakeholder Route to Business and Social Value. Cambridge University Press, Cambridge, UK.

6 Sayan Banerjee (2016). Social Innovation: A Theoretical Approach in Intertwining Climate Change with Social Innovation Handbook of Research on Climate Change Impact on Health and Environmental Sustainability (pp. 593-618). www.irma-international.org/chapter/social-innovation/140598/

In the case of PANACEA, 'society' is narrowed to the agricultural community as their adoption patterns[7] are considered highly important for the development of the NFC sector. They form a critical part of the society that will contribute to the innovation of NFC value chains starting from the selection of suitable crop species to the production of innovative biobased products.

The process of adopting NFCs as part of the agricultural crop mix will be analysed during the PANACEA project to understand how the agricultural community can shift to knowledge-based agriculture and further facilitate rural development and the European bioeconomy.

The selection of this stakeholder group as fourth helix is in accordance to the rationale of the work European Commission performed for Smart Specialisation Strategies[8]. The triple helix has been applied in local and national innovation initiatives while the quadruple helix has been identified as the reference approach for the preparation and implementation of Research and Innovation Strategies for Smart Specialisation (RIS3) and local implementation of value chains.

For the purposes of the work, Non-Food Crops (NFCs) are considered as 'innovation' and the helix type of approach is used to firstly understand optimal ways of sharing information and transferring knowledge and then assigning and analysing the role of each helix in supporting their adoption and integration to European agricultural systems. The inclusion of the agricultural community as fourth helix allows us to broaden the classic innovation concept of triple helix with the actual actors producing NFCs, leading to innovation user-oriented[9] forms.

The stakeholder categories forming the four main components of the quadruple helix in the PANACEA project are further disaggregated into categories that also relate to advisory services in European Agricultural Knowledge and Innovation Systems[10] (AKIS) within the participating countries and Europe:

- Research and education: research institutes, universities, technology centres, technology platforms, agricultural students and EU projects. Advisory and extension services facilitate SMEs access to technology and knowledge and act as a liaison to bring

[7] Gomes, L., Lima, M., 1992. From modeling individual preferences to multicriteria ranking of discrete alternatives: a look at prospect theory and the additive difference model. Found. Comput. Decis. Sci. 17, 113–127.

8 European Commission (2012), Guide to Research and Innovation Strategies for Smart Specialisation (RIS 3), May 2012.

9 Arnkil R., Järvensivu A., Koski P. and Piirainen T. (2010), Exploring Quadruple Helix Outlining user-oriented innovation models, Final Report on Quadruple Helix Research for the CLIQ project, under the Interreg IVC Programme.

10 https://ec.europa.eu/programmes/horizon2020/en/news/tracking-actors-innovation-agriculture

together research services, higher education and agribusiness with producers. Therefore, we have clustered them with this research and education group.

- Industries and SMEs: All bio-based industries including small and medium enterprises.
- Government and regulating bodies: agricultural chambers, ministries, regional government and authorities from sectors like agriculture, waste, circular economy, industry, rural development; EIP-AGRI; other thematic networks, operational groups.
- Agricultural community: young farmers; foresters, land owners, associations, cooperatives, unions, etc.

Database structure

Information on stakeholders is consolidated with contribution of project partners who have long term experience in NFCs. The PANACEA consortium consists of sixteen European partners from ten European countries (France, Greece, Italy, Lithuania, The Netherlands, Poland, Portugal, Romania, Spain, United Kingdom). The partners themselves represent research organisations (2), universities (4), innovation broker (1), organisations and SMEs (8) with expertise on research extension to farming and large chemical company (1). The components used for the mapping of the relevant PANACEA stakeholders are categorised as shown in Table 2 below:

Table 2 Components used for the mapping of the relevant PANACEA stakeholders

Component	Main group	Sub Group
Quadruple helix categories (Stakeholder institutional capacities)	Research and Education	Research and Innovation networks Research Institutions Universities Technology centres and platforms
	Industry and SMEs	Investors Bio-based Industries & SMEs
	Government	Government Body Advisory and extension services Policy Makers and Regulating Bodies Rural Development National Authorities
	Agricultural community	Young farmers; Foresters; Land owners Associations; Cooperatives & Unions
Geographic & climatic region	Mediterranean	Greece, Italy and Spain
	Continental	Poland, Romania, and Lithuania
	Lusitanian	France, Portugal
	Atlantic	UK, The Netherlands
Type of NFCs	Oil crops Lignocellulosic crops Carbohydrate crops Speciality crops	
Stages of value chain	Cultivation/ Harvesting Processing/Conversion Transport/ Infrastructure/ Logistics Market	

Relevant end-use/market sector	Biochemical Biomaterial Bioenergy Biopharmaceutical	

Mapping stakeholders

During the first four months of the project partners have identified relevant national stakeholders who have interest in the project objectives and can contribute to the work and foreseen outputs. These stakeholders will be the backbone to develop an effective communication and knowledge sharing platform so that the applicable best practice solutions are widely disseminated, and interests of the end-users/grassroots level stakeholders and innovative[11] ideas are gathered[12]. Their engagement is important for the successful delivery of the project goals. In this report their mapping has been structured in five layers:

i) Institutional capacities (matching helices);
ii) Geographic region;
iii) Type of NFCs;
iv) Stages of the value chain; and
v) Relevant sector based on end use /market.

In the foreseen update of Deliverable 3.1 (Month 10) a sixth layer will be added addressing their policy development[13] for NFCs which will feed directly into the work of Task 3.4 and Deliverable 3.4: PANACEA roadmap for the successful penetration of non-food crops the near-to-practice[14].

Stakeholder mapping based on institutional capacities

The stakeholders with different institutional capacities will have different interests (expectation) and influence (contribution) in the overall PANACEA project objectives and

[11] von Schomberg, R., 2014. The quest for the "right" impacts of science and technology: A framework for responsible research and innovation, in: Responsible innovation 1: Innovative solutions for global issues. Springer, Netherlands, pp. 33–50.

[12] Mitchell, R., Agle, B.,Wood, D., 1997. Toward a theory of stakeholder identification and salience: defining the principle of who and what really counts. Acad. Manag. Rev. 22, 853–886.

[13] Kuhlmann, S., Edler, J., 2003. Scenarios of technology and innovation policies in Europe: investigating future governance. Technol. Forecast. Soc. Chang. 70, 619–637.

[14] Moehrle, M., Isenmann, R., Phall, R., 2013. Technology Roadmapping for Strategy and Innovation: Charting the Route to Success. Springer, Heidelberg, New York, Dordrecht,Heidelberg New York Dordrecht London London.

goal. Grouping of stakeholders according to their interest and influence is very important for to understand their perceptions[15] and future expectations.

Table 3 summarises what could be the probable interest and influence each stakeholder groups have in relation to the PANACEA project. This will be further validated and confirmed in consultation with the stakeholders through workshops, interviews and online surveys.

Table 3 Interest and Influence of stakeholders in the PANACEA project objectives and goal.

Stakeholder Institutional Capacity	Interests of stakeholders in the PANACEA objectives and goal	Influence from stakeholders to achieve PANACEA goal
Research and Education	-use data and information for similar research -interest to collaborate with similar research projects - platform to create a knowledge hub on NFCs	-contribute by participating in research by sharing knowledge related to NFCs - Dissemination of the outputs of the project at wider reach
Industry & SMEs	- platform with data that can give evidence to their work and guide their future decisions for new plants and investments.	-Bio-based industries are in key position for promoting and funding the near-to-practice NFCs
Government	-interactive platform to learn from both the best practices and failures of the past policies	-provide evidence for national and regional strategies
Agricultural community	-platform for farmers' community voice to be heard and valued (community might be interested in engaging for bottom-up knowledge generation) -interested in the opportunity to network with PANACEA multi-actor platform	-contribute their practical experience and knowledge on NFC agronomy, near-to-practice, best practices

One of the research elements during PANACEA work for stakeholders is to assess the flow of knowledge transfer across the various groups involved i.e. disseminations of best practices in NFCs sector and gathering of needs and concerns of grassroots stakeholders and innovative ideas.

As the project progresses, through consultations and dedicated national workshops the stakeholders will be studied under the framework of influence versus interest and how it interplays with the power stakeholders have over the success and failure of the project objectives (Figure 2).

[15] J. Hall, S. Matos, B. Silvestre, M. Martin, Managing technological and social uncertainties of innovation: the evolution of Brazilian energy and agriculture, Technol. Forecast. Soc. Chang. 78 (7) (2011) 1147–1157.

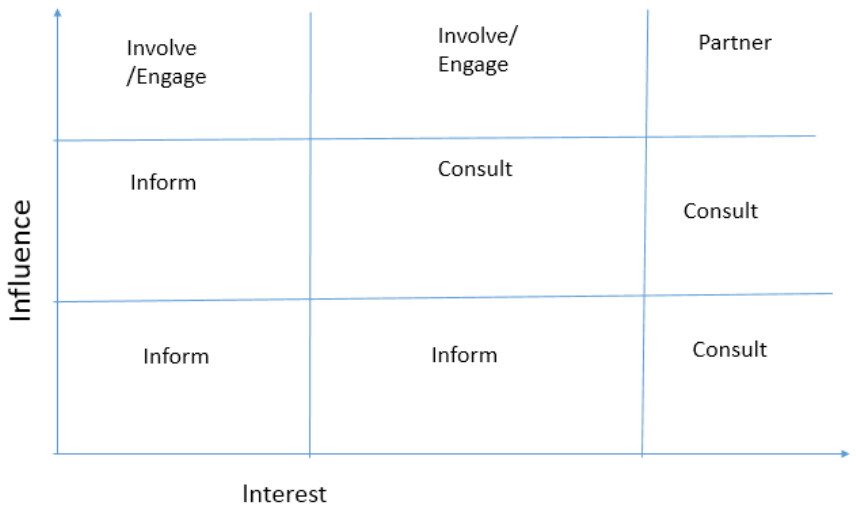

*Figure 2 Influence = Power * Interest (Stakeholder analysis framework adapted from Mendelow and Eden & Ackerman framework)*

After stakeholders mapping, stakeholder analysis will be done using the framework adapted from Mendelow, 1985[16] (power and interest matrix) and Eden and Ackerman, 1998[17] (influence and interest matrix). The additional dimension of influence to power and interest matrix will add depth in stakeholder analysis[18], [19].

This will allow us to understand the importance of the stakeholders and who influences who, thus making it easier to develop appropriate knowledge transfer channels[20]. This in-depth stakeholder analysis will take place during the national and regional value chain events on further consultation with the stakeholders as a part of Task 3.2.

Based on these events during months 29 & 30 of the project we will be able to identify key stakeholders and define their interest (concerns, needs and issues) and their level of influence (commitment and resistance) regarding the NFCs research, innovation, dissemination/diffusion and adoption/assimilation.

[16] Mendelow, A. (1985) 'Stakeholder analysis for strategic planning and implementation' in Strategic Planning & Management Handbook, King & Cleland (eds). Van Nostrand Reinhold, NY

[17]. Eden, C. and Ackermann, F. (1998) Making Strategy: The Journey of Strategic Management, London: Sage Publications.

[18] Cleland, D. I. (1986). Project stakeholder management: a case study examining the preparation of a U.S. Environmental Protection Agency "air quality criteria document" Project Management Journal, 17(4), 36–44.

[19] Bhaskar, R (2010). Context of interdisciplinarity: interdisciplinarity and climate change. In R Bhasakar, C Frank, KG Høyer, P Næss, & J Parker (Eds.), Interdisciplinarity and climate change: Transforming knowledge and practice for our global future (pp. 1–24). New York: Routledge.

[20] Barbier, EB (2009). Rethinking the economic recovery: a global green new deal. United Nations Environment Program (UNEP). http://www.unep.org/greeneconomy/portals/30/docs/GGND-Report-April2009.pdf

The following map-based interpretations will be analysed throughout the course of the project and provide input to Task 3.4 'Roadmaps for the successful penetration of the near-to-practice NFCs in European agriculture.'

Stakeholder mapping based on geographic region & prevailing climate

'PANACEA will significantly contribute to an increased flow of practical information between geographical areas in Europe concerned by the near-to-practice NFC.'

PANACEA aims to contribute to effective knowledge transfer and information sharing across European geographical boundaries.

The ten participating countries represent different agro-climatic and farming structures thus the selection and cultivation of the NFC are different depending upon the region they are from (Table 4).

The stakeholders are therefore mapped using their geographic location as reference because that will allow us to assess the potential of networking and future partnership within and in between these regional groups.

Table 4 Geographic region and prevailing climate in the PANACEA partner countries

Geographic region	Prevailing climate	Countries
Mediterranean	Short precipitation periods and long hot and dry summers. The length of the growing season is long and air temperatures favourable for growing a wide number of crops. However, summer drought is a limiting factor that imposes the use of irrigation for crop survival and achieving high crop yields.	Greece, Italy and Spain
Continental zone	High temperatures in summer and very low in winter, followed by relatively high precipitation.	Poland, Romania, Lithuania, Germany, Ukraine (represents the most part of Europe)
Lusitanian zone	High summer temperatures and mild winters	France, Portugal (represents the Southern Atlantic area)
Atlantic zone	Low temperatures in summer and winter, abundant rainfalls Satisfactory length of growing period.	UK, The Netherlands, Germany, Belgium
Pannonian zone	Dry continental climatic condition. Cold winters and dry hot summers. Most precipitation falls in spring. Saline steppes and salt lakes.	Hungary

Stakeholder mapping based on types of non-food crops

Non-food crops can support the European bio economy, provide additional income opportunities and create new rural jobs. In the framework of PANACEA project, they are divided in four main categories (oil, lignocellulosic, carbohydrate and speciality) based on the type of raw materials they provide as feedstock for bioenergy, biofuels and bio-based products.

Stakeholder mapping based on stages of the value chain

Within the same value chain different stakeholders may have different crop management techniques, logistical approaches and conversion pathways. It is very important to effectively share information on best practices among the stakeholders so that innovative ideas are promoted. To allow this all stakeholders will also be mapped based on their involvement/ interest to the different value chain stages.

Stakeholder mapping based on relevant sector or end-use of NFCs value chain

Stakeholders will also be mapped based on the relevant market sector they are involved in. This mapping will allow stakeholders to identify their potential partners for the market expansion and share best practices around the end-use product.

Mapping PANACEA stakeholders

PANACEA ten partner countries from the consortium have identified their national stakeholders (see Annex II) and including with the stakeholders who provided letter of support for the PANACEA project from countries other than ten partner countries, now we have 700 plus NFCs stakeholders.

All PANACEA stakeholders have been mapped within this version of the deliverable based on their institutional capacities and geographic region.

Work in ongoing to collect further details for PANACEA stakeholders regarding stages of value chain and end-use sectors. In this version of Deliverable D3.1 there are sufficient details only for three participating countries (France, Lithuania and Poland).

Institutional capacities

The first mapping of all PANACEA stakeholders based on their institutional capacity using the quadruple helix categories is presented in Figure 3. Research and education stakeholders comprise of 33%, industry and SMEs 32%, government 17% and agricultural community is 18% of the total stakeholders.

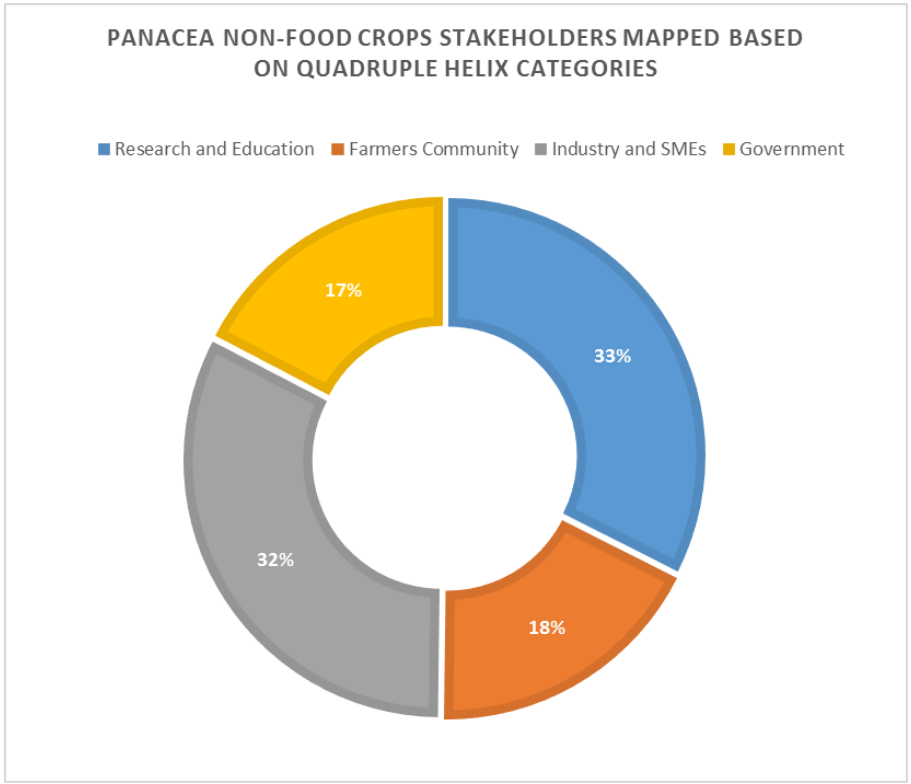

Figure 3 PANACEA NFCs stakeholders mapped based on their institutional capacity (Quadruple Helix categories)

The quadruple helix approach used in PANACEA recognises that the agricultural community is a very important actor for the innovation in NFC sector and subsequent adoption of the NFCs best practices. Based on the initial mapping of the stakeholders suggested by partners so far, the key recommendation to the participating institutes is to increase in the participation of the agricultural community in their national networks. More in depth work will be performed for the opportunities' and challenges to increase the participation of the agricultural community in each participating country.

Geographic region & climatic condition

On mapping PANACEA stakeholders based on climatic condition prevalent in their region we can see in Figure 4 that 30% of the stakeholders falls under continental zone and 26% in Mediterranean and 22% each in Lusitanian zone and Atlantic zone. This shows that there is good representation of stakeholders from these four different agro-climatic zones, therefore allowing the potential of networking and knowledge sharing of innovative research on NFCs science and technology.

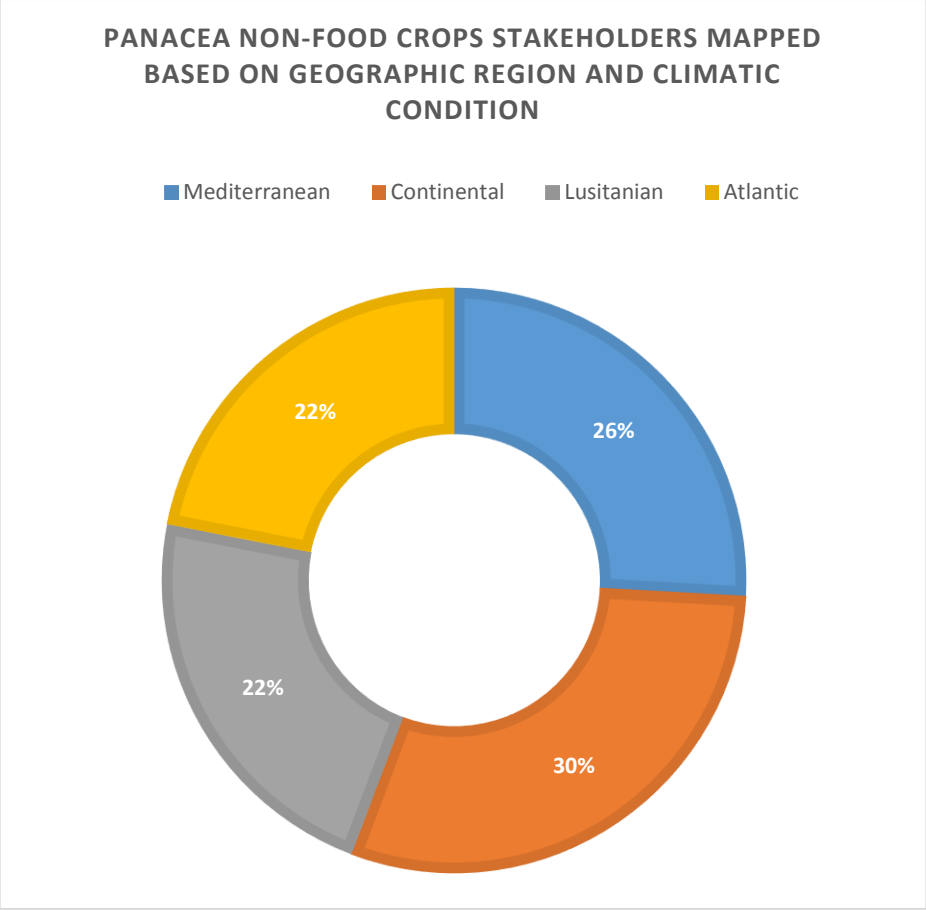

Figure 4 PANACEA stakeholders mapped based on the geographic region and prevailing climate

Stages of the value chain

Work is ongoing

Sector or end-use of NFCs value chain

Work is ongoing

ANNEX I National stakeholder mapping

In this version of D3.1, PANACEA partners have identified in average 50+ stakeholders for each country (see Annex II) relevant for the project from their network who are currently working with NFCs.

These stakeholders are not the comprehensive representation of all stakeholders working in NFCs sector in each country but form a representative matrix which will be continuously updated with information from the ongoing national events.

The initial mapping at national level, as presented in this report, provides the first overview of the composition of stakeholders working on NFCs in each country. Understanding the composition of stakeholders is important to identify both opportunities and gaps in the sustainable adoption of NFCs innovation processes/products and sharing of knowledge of near-to-practice NFCs.

France

We have a list of 71 French stakeholders (see Annex II, Table 1) and at present the work in ongoing to collect additional information about their institutional capacity, relevant sector, type of NFCs and stage of NFCs value chain. However, we have still mapped them based on limited information. Here we can see that research and education stakeholders represents 38% of the stakeholders followed by industry and business stakeholders which is 23%. There is good distribution of stakeholders over three stages of value chain: processing/conversion is 37%, production and cultivation 30% and market development is 23%. In regards to crops, there seems to be high interest in oil crops as opposed to the carbohydrate and speciality crops. Majority of the stakeholders are engaged in bioenergy and biomaterial sectors.

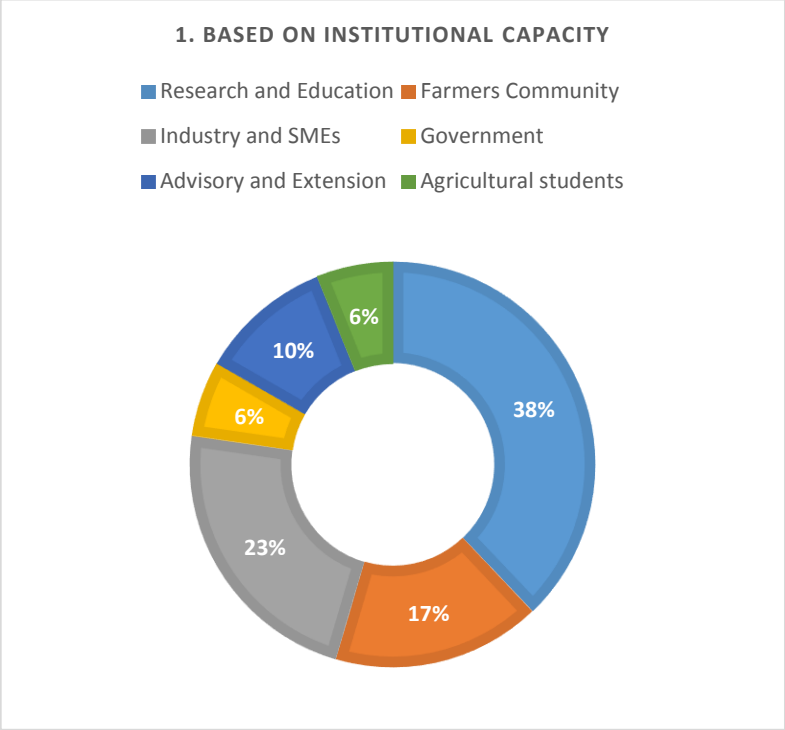

Figure A.I.1 French NFCs stakeholder mapping based on institutional capacity

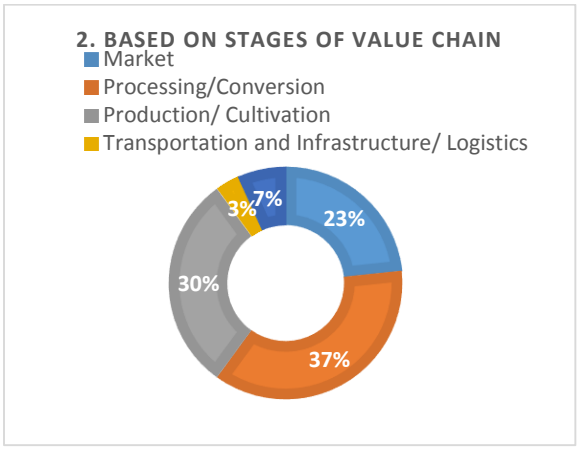

Figure A.I.2 French NFCs stakeholder mapping based on stages of value chain

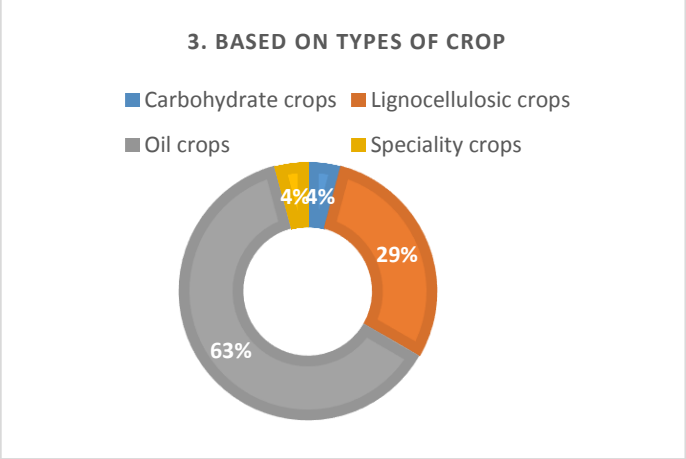

Figure A.I.3 French NFCs stakeholder mapping based on types of crop

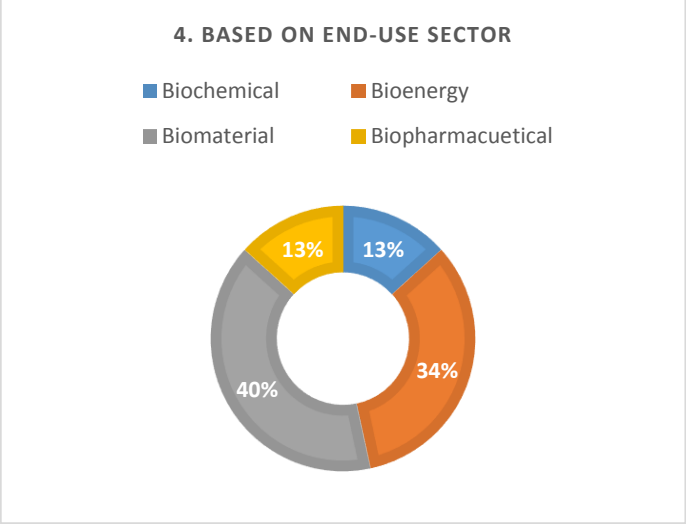

Figure A.I.4 French NFCs stakeholder mapping based on end-use sector

Stakeholders mapping based on the crop type and stage of value chain:

Work is ongoing

Stakeholders mapping based on the end-use sector and stage of value chain:

Work is ongoing

Stakeholders mapping based on the stages of value chain per crop type

Table A.I.1. French NFCs Stakeholders mapping based on the stages of value chain per crop type:

Crop type/Stages of Value chain	Pre-production	Processing/Conversion	Production/ Cultivation	Market
Carbohydrate crops		ATEE - Club Biogaz		
Oil crops		ITERG	Terres Inovia	CVA - Centre de Valorisation des AgroRessources
		OLEON	FOP French Federation of Oilseed and Protein Producers	Sofiprotéol
				SFEL
		OLEAD		INEOS - Champlor
				FNCG
				UNIKALO
				Groupe Avril
Lignocellulose crops	COOPENERGIE		Chambre Agriculture Seine-Maritime	
			Chambre Agriculture Hauts de France	
Not specified crop type	AELERD	ENSCPB	EURALIS	DGE - Bureau de la chimie et des biotechnologies
		CRITT Bio Industries		
		IRTSEA		
		IFP Energies Nouvelles	PHYTORESTORE	
		Ciments Calcia	Axereal	
		Alkern		
		MEPI - Maison Européenne des Procédés		
		Innovants		

Greece

On mapping 70 stakeholders (see Annex II, Table 2) from Greece based on their institutional capacity, as shown in Figure 5 majority of the stakeholders, 38% are from industry and SMEs. Research and education stakeholders are 12% and government together with advisory and extension make up 19%.

Out of 70 stakeholders we have the value chain information for 43 of them and upon mapping them as shown in Figure 6, we found out that almost half, 49% of the stakeholders are involved in the processing and conversion of the biomass, 5% of them are involved in the harvesting, 29% in production and cultivation and 18% in the market. We have the crop type information for 21 of them and upon mapping them as shown in Figure 7, we found out that more than half, 52% of the stakeholders are growing or working with lignocellulosic crops, 38% are working with oil crops and only 5% of them are working on speciality crops and carbohydrate crops. On mapping 19 stakeholders with information on end-use sector, as shown in Figure 9, we found out that majority of them 69% works in bioenergy sector, 26% in biomaterial, 5% in biopharmaceutical sector. Among this pool of stakeholders, we do not have anyone working in biochemical sector.

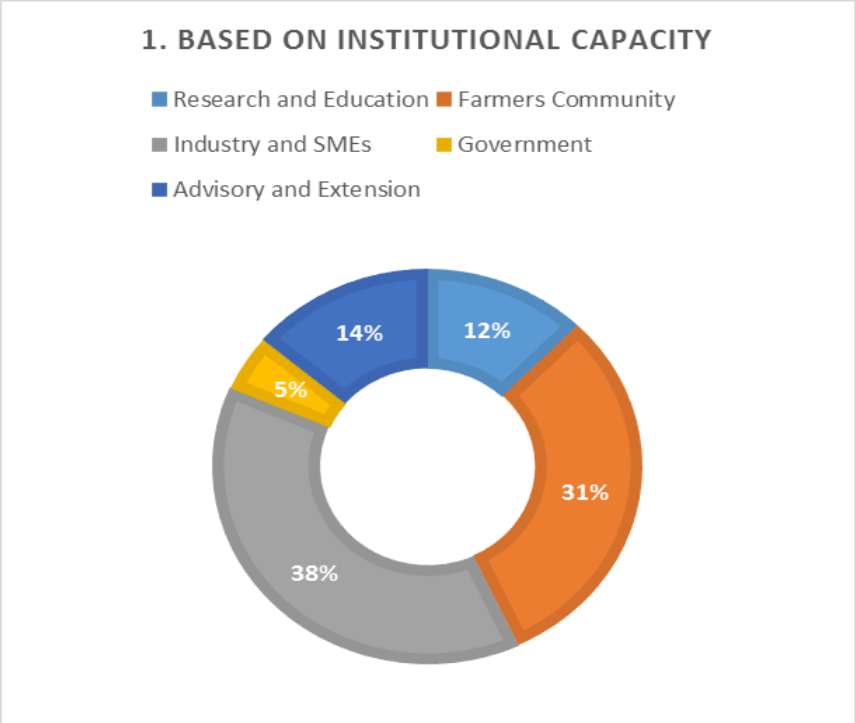

Figure A.I.5. Greece NFCs stakeholder mapping based on institutional capacity

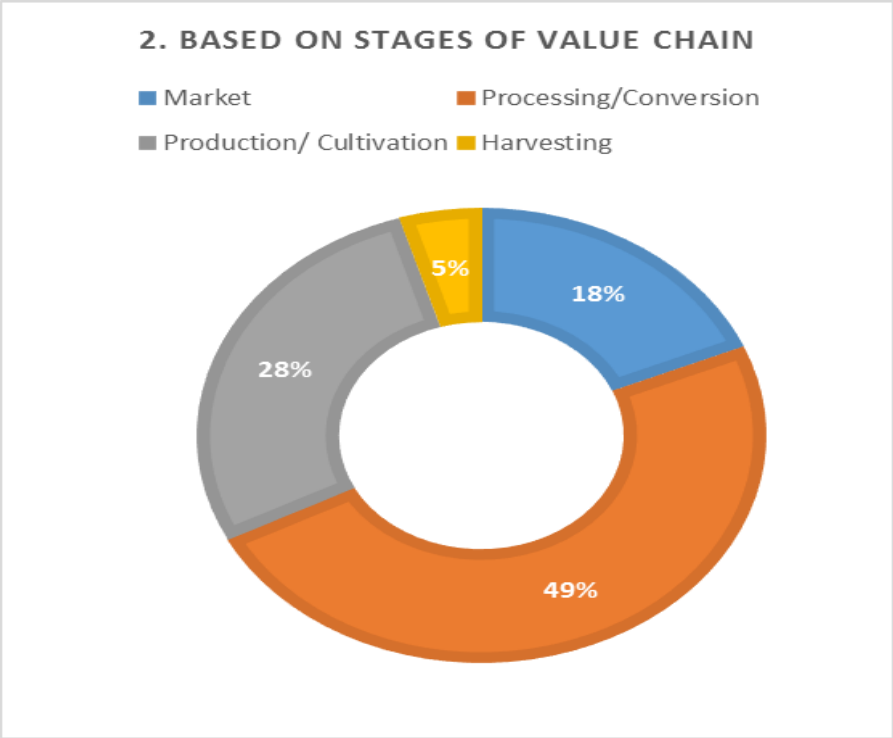

Figure A.I.6. Greece NFCs stakeholder mapping based on stages of value chain

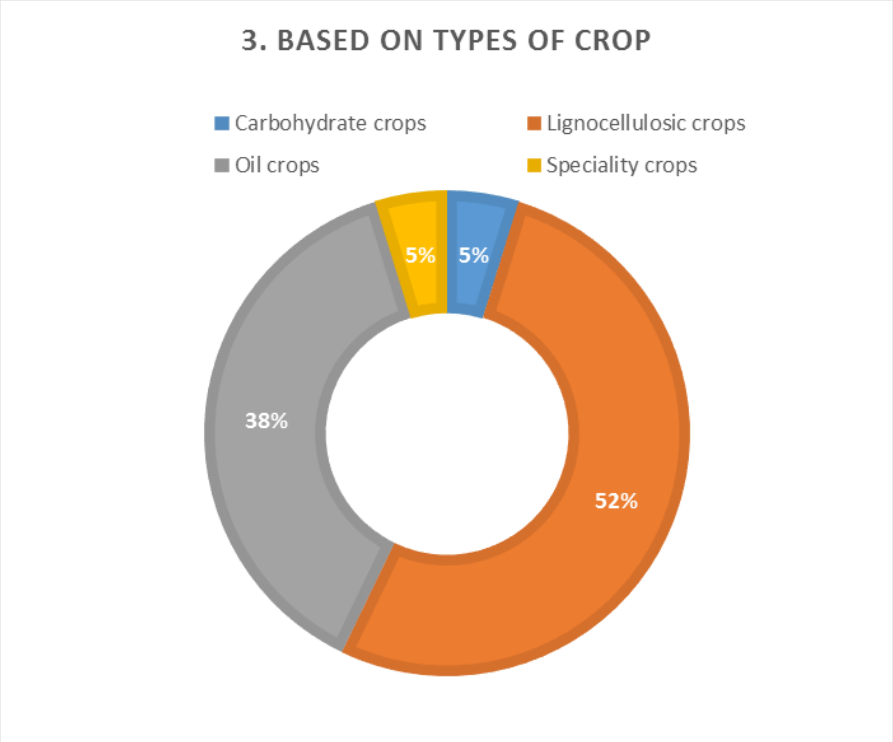

Figure A.I.7. Greece NFCs stakeholder mapping based on types of crop

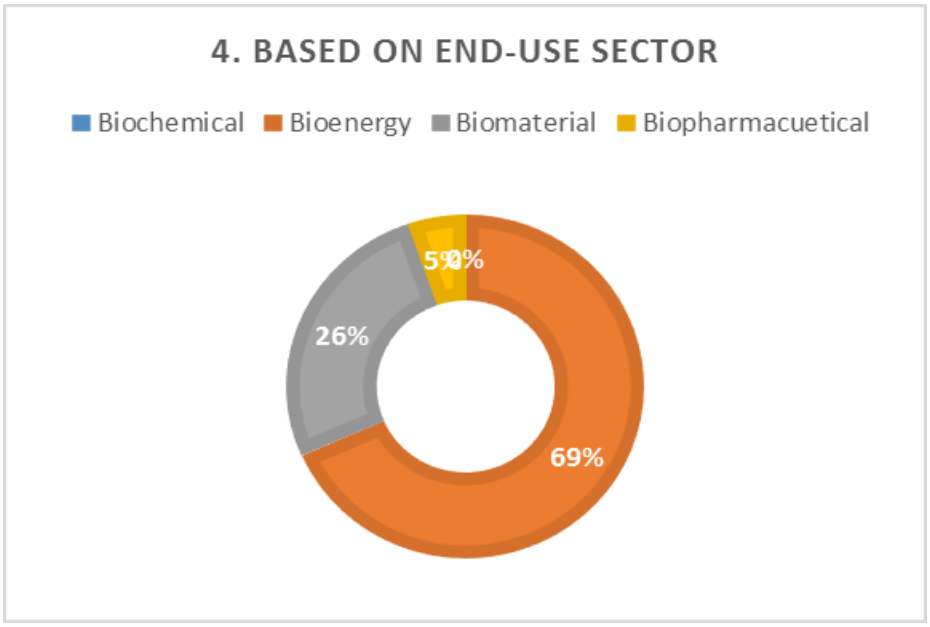

Figure A.I.8. Greece NFCs stakeholder mapping based on end-use sector

Stakeholders mapping based on the crop type and stage of value chain

Work is ongoing

Stakeholders mapping based on the end-use sector and stage of value chain

Work is ongoing

Stakeholders mapping based on the stages of value chain per crop type

Work is ongoing

Italy

On mapping 60 stakeholders (see Annex II, Table 3) based on their institutional capacity we got the figure 9 below which shows that research and education makes up one third of the Italian NFCs stakeholders. Similarly, industry and business stakeholders make up 27% while famers community represents only 12% of this group. The work in ongoing to collect more information on Italian stakeholders based on their relevant sector, type of NFCs and stage of NFCs value chain.

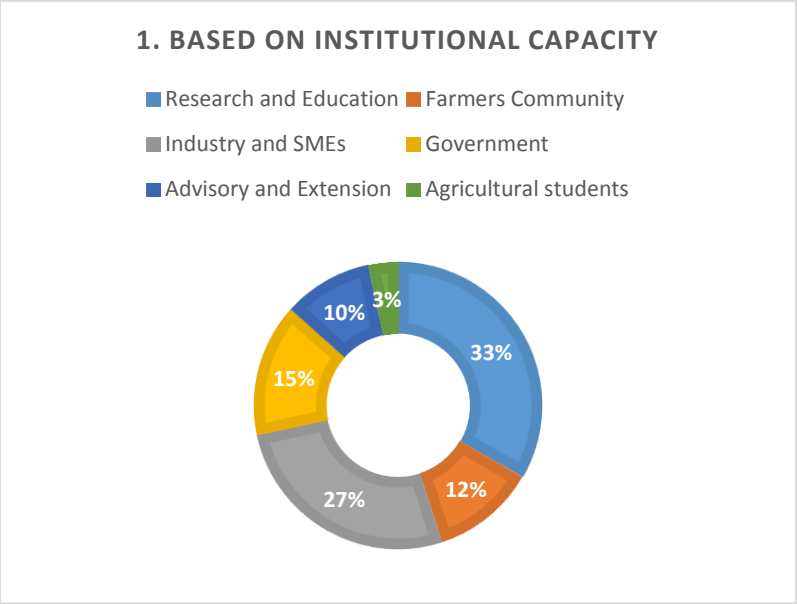

Figure A.I.9. Italian NFCs stakeholder mapping based on institutional capacity

Stakeholders mapping based on the crop type and stage of value chain

Work is ongoing

Stakeholders mapping based on the end-use sector and stage of value chain

Work is ongoing

Stakeholders mapping based on the stages of value chain per crop type

Work is ongoing

Lithuania

On mapping 70 stakeholders (see Annex II, Table 4) based on their institutional capacity, relevant sector, type of NFCs and stage of NFCs value chain they are involved in we have got the following 4 figures of their composition.

We can see in Figure 10, that farmer's community make up almost half of the Lithuanian stakeholders, while research and educational institution make up one quarter of the total stakeholders. Similarly, industry and SMEs make less than a quarter. When Lithuanian stakeholders are mapped based end use sector, biomaterial represents more than 70% of the stakeholders while biochemical just 4%. Similarly, when mapped based on the types of crop that stakeholders grow or work with, speciality crop is the most common (61%) type of crop followed by lignocellulosic which is 24%. Most than half, 66% of the stakeholders are involved in the production and cultivation of the NFCs and 22% are working in the processing and conversion, whereas just a 6% of stakeholders are working in pre-production and 6% in market end of the NFCs value chain.

Understanding the composition of the stakeholders will allow us to supplement the in-depth NFCs value chain analysis.

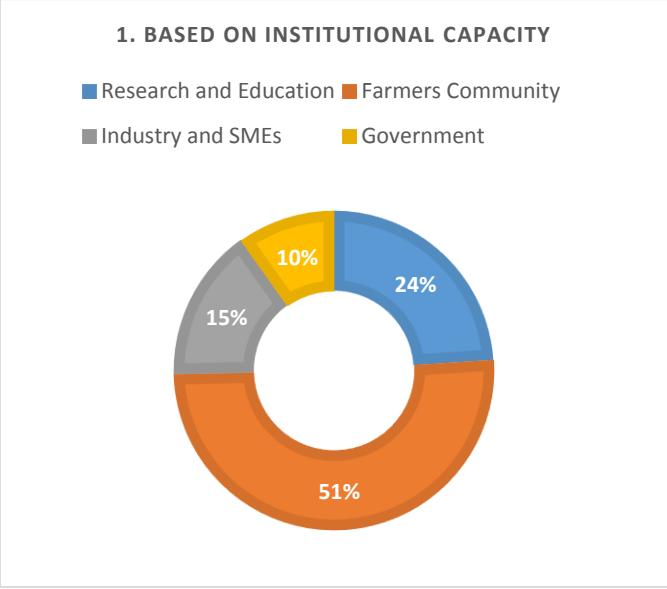

Figure A.I.10 Lithuanian NFCs stakeholders mapping based on institutional capacity

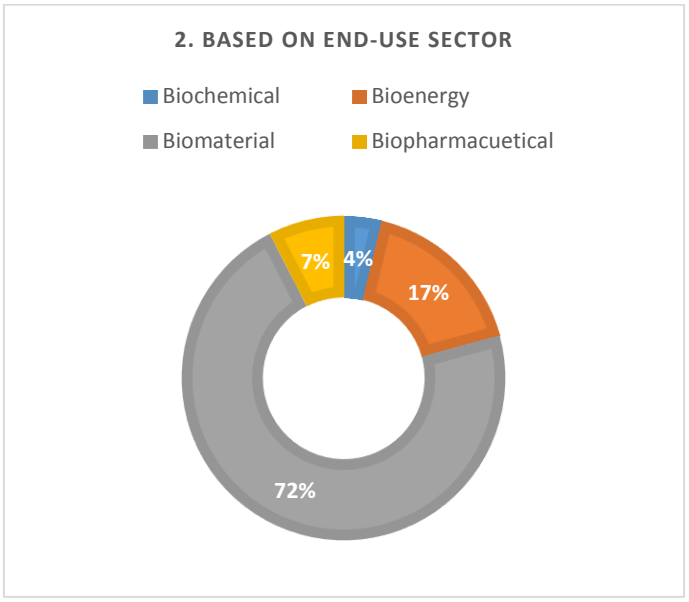

Figure A.I.11 Lithuanian NFCs stakeholders mapping based on end-use sector

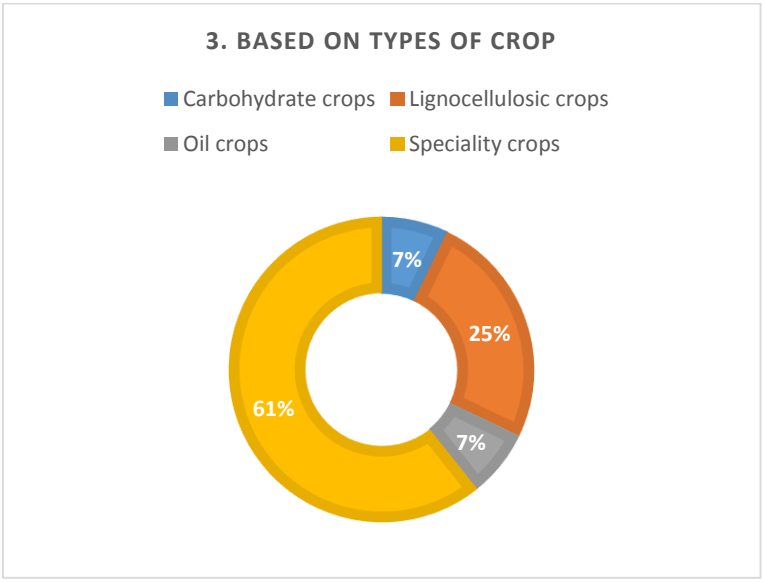

Figure A.I.12 Lithuanian NFCs stakeholders mapping based on types of crop

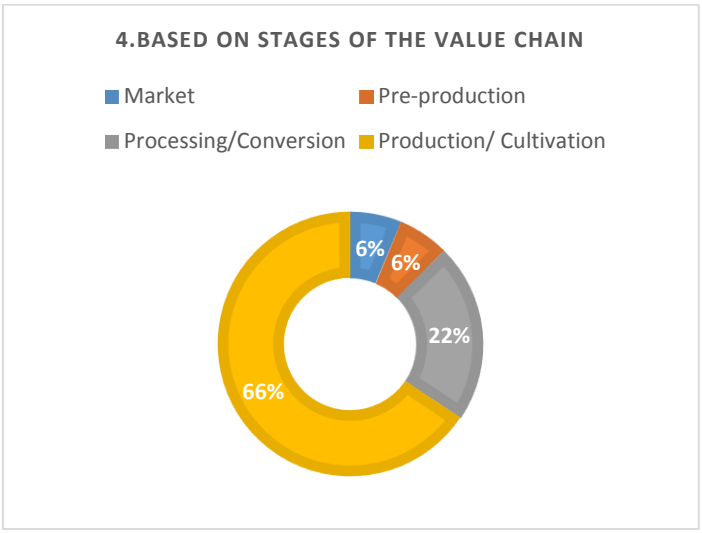

Figure A.I.13 Lithuanian NFCs stakeholders mapping based on the stages of value chain

Stakeholders mapping based on the crop type

Lithuanian stakeholders when mapped based on the type of crop and stage of value chain they are involved in we can see that only speciality crop has stakeholders involved in all the stages of value chain whereas for other crops we have certain stages of value chain with gaps of stakeholders. This does not mean there are no stakeholders working on these ends of the value chain but illustrates the likelihood of less number of stakeholders involved at present. This information facilitates the interested stakeholders from industry, business and farmers' community to see the opportunities of partnership or leadership for NFCs value chain formation. The stakeholders can identify the opportunities where their specific contribution based on their institutional capacity is necessary for the overall functioning of the value chain. This also allows Government bodies and extension services to identify the areas for policy and technological interventions.

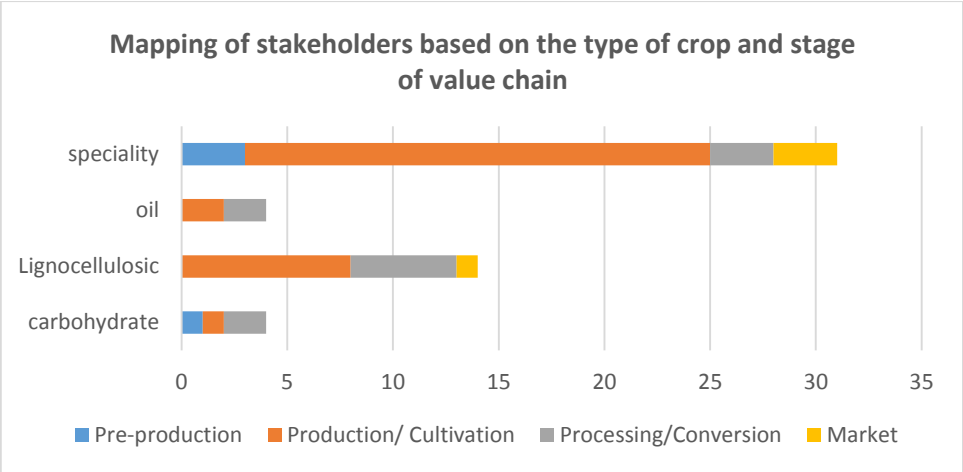

Figure A.I.14 Lithuanian NFCs stakeholders mapping based on the type of crop and stage of value chain

Stakeholders mapping based on the end-use sector and stage of value chain

Lithuanian stakeholders when mapped based on the end-use sector and stage of value chain they are involved in we can see that only biomaterial sector has the involvement of majority of the stakeholder for all the stages of the value chain whereas we see zero involvement in biopharmaceutical sector. Biochemical sector on the other hand has stakeholders involved in just the preproduction stage and this shows that there has been some research done or infrastructure available or policies in place at the initial level. Therefore, this means there is a potential situation to further the value chain activities.

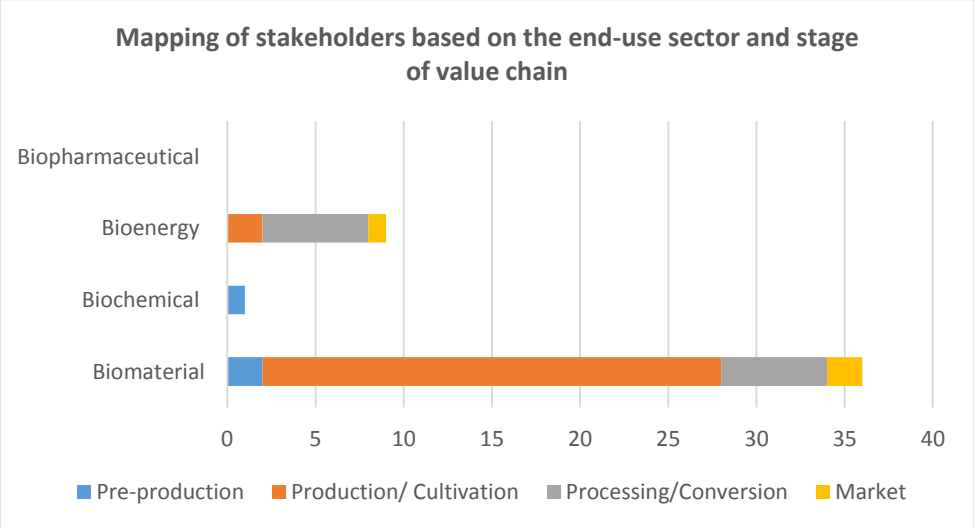

Figure A.I.15 Lithuanian NFCs stakeholders mapping based on end-use sector and stage of value chain

Stakeholders mapping based on the stages of value chain per crop type

Lithuanian stakeholders when mapped based on the stages of value chain for all different crop types we can see below the area where concentration of stakeholders is high and where there is low participation.

Table A.I.2. Lithuanian NFCs stakeholders mapping based on stage of value chain per crop type

Crop type/Stages of Value chain	Pre-production	Processing/Conversion	Production/ Cultivation	Market
Speciality crops	Kaunas University of technology	UAB "Modus goup"	Lithuanian grain growers association	UAB „Agrolitpa“
	Center for Physical Sciences and Technology		Klaipeda University	Ministry of Economy of the Republic of Lithuania
	Lietuvos sėklininkystės asociacija	Lithuanian Confederation of Industrialists	Mantas Vilionis	National Paying Agency under the Ministry of Agriculture of the Republic of Lithuania
		Lietuvos grūdų perdirbėjų asociacija	Rimasntas Gaidelis	
			Chamber of Agriculture of the Republic of Lithuania	
			UAB "Euromediena"	
			Lithuanian Farmers' Union	
			Association of Lithuanian Agricultural Companies	
			Institute of Agriculture	
			Birute Vaitelyte	
			AMMIA	
			Jūratė Ramanauskienė	
			Rasa Radžiūnienė	
			Valdas pupeikis	
			Dainius Vyčas	
			Gediminas Kontrimavičius	
			Mantas Župerka	
			UAB „Barzdų agro”	
			Žūk „mūsų ūkis”	
			Giedrius Daugėla	
			Aurimas garlauskas	
			Ovidijus Pečeliūnas	
			Raimonda Sandaraite	
			AB „AUGA group”	
			Upytes eksperimentinis ukis	
			Dotnuvos eksperimentinis ukis	
			AB „AUGA group”	
			LAMMC Vokės filialas	

			Farm of Kęstutis Zinkevičius	
			Farm of Mindaugas Skruzdys	
			Martynas Puidokas	
			Baltijos pluoštinių kultūrų augintojų ir perdirbėjų asociacija	
			ŽŪB Berčiūnai	
			LAMMC Vėžaičių filialas	
			Farm of Sigitas Vėjelis	
Carbohydrate crops	Vytautas Magnus University	UAB "Kurana"		
		AB "Amilina"		
Oil crops		Aleksandro Stulginskio universitetas		
		UAB "Mestila"		
Lignocellulosic crops		Aleksandro Stulginskio universitetas		UAB "Enerstena"
		Urtė Stulpinaitė		
		Egle Tauraite		
		Lithuanian biomass association LITBIOMA		
		Lithuanian Energy Institute		
Not specified crop type		Santaka Valley	Farm of Mantvydas Drupas	
		Acorus calamus/Svencioniu vaistazoles	Farm of Stasys Stačkūnas	
			Farm of Gintautas Navickas	
			Farm of Albinas Navickas	
			Farm of Jūrate Janušauskiene	
			Farm of Arminas Teišerskis	
			Lithuanian Ministry of Agriculture	
			Farm of Saulius Daniulis	
			Dotnuvos eksperimentinis ukis	

The Netherlands

On mapping 97 stakeholders (see Annex II, Table 6) based on their institutional capacity, as shown in Figure 16 majority, 78% of the stakeholders are from industry and business. Similarly, 14% from research and education, 6% from government and 2% from farmers' community. The work in ongoing to collect more information on Dutch stakeholders based on their relevant sector, type of NFCs and stage of NFCs value chain.

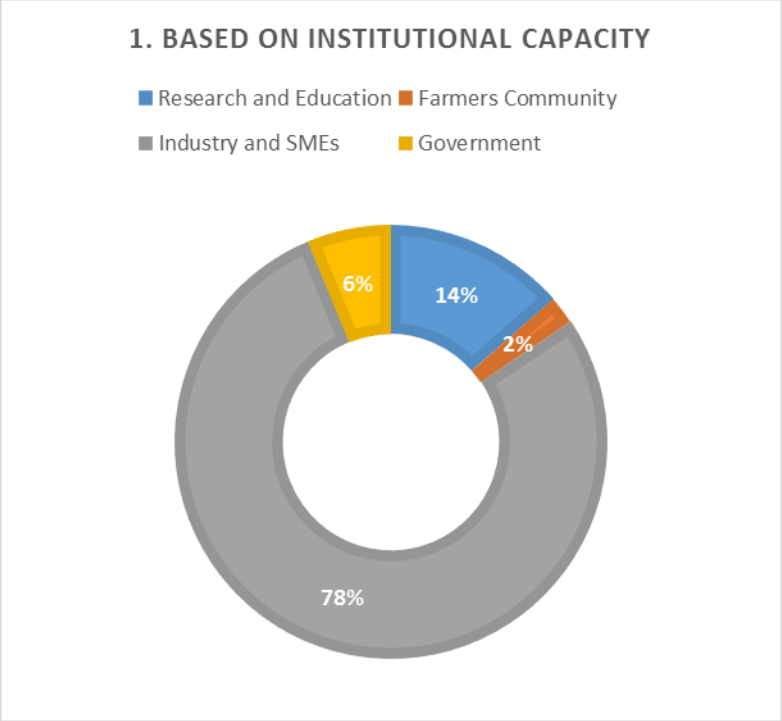

Figure A.I.16 The Netherlands NFCs stakeholders mapped based on institutional capacity

Stakeholders mapping based on the crop type and stage of value chain

Work is ongoing

Stakeholders mapping based on the end-use sector and stage of value chain

Work is ongoing

Stakeholders mapping based on the stages of value chain per crop type

Work is ongoing

Poland

On mapping 70 stakeholders (see Annex II, Table 6) based on their institutional capacity, relevant sector, type of NFCs and stage of NFCs value chain they are involved in we have got the following 4 figures of their composition.

We can see that from Figure 17, in this group advisory and extension service stakeholders make one third of the Poland's NFCs stakeholders. Similarly, industry and business stakeholders make up 28% while famers community represents only 8% of this group. From Figure 18, we can see that when they are mapped based end use sector, bioenergy represents 58% of the stakeholders while there are no stakeholders representing biochemical sector. Similarly, when mapped based on the types of crop, 35% work with speciality crop and 30% with lignocellulose, 26% oil crops. Almost half, 48% of the stakeholders are involved in the production and cultivation of the NFCs and 30% are working in the market development and 23% in processing and conversion, whereas just a 1% of stakeholders are working in transportation and logistics. Understanding this composition of the stakeholders will allow us to supplement the in-depth NFCs value chain analysis.

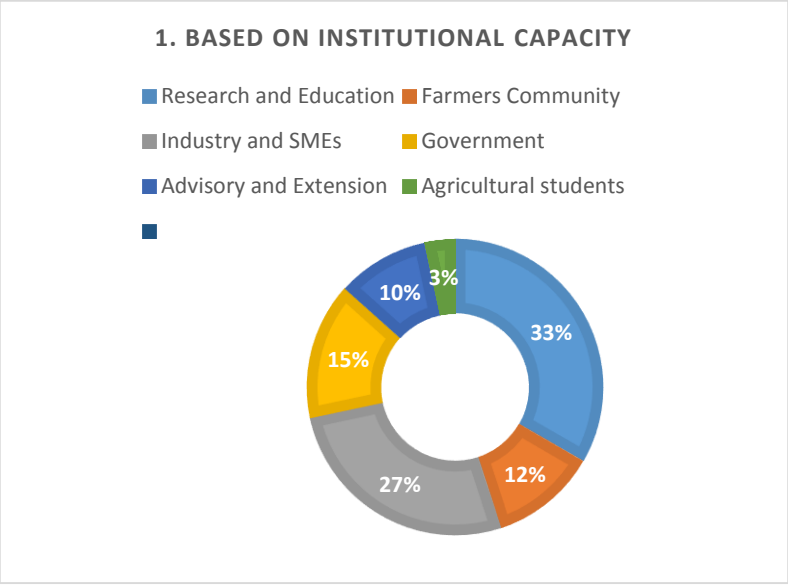

Figure A.I.17 Polish NFCs stakeholders mapping based on institutional capacity

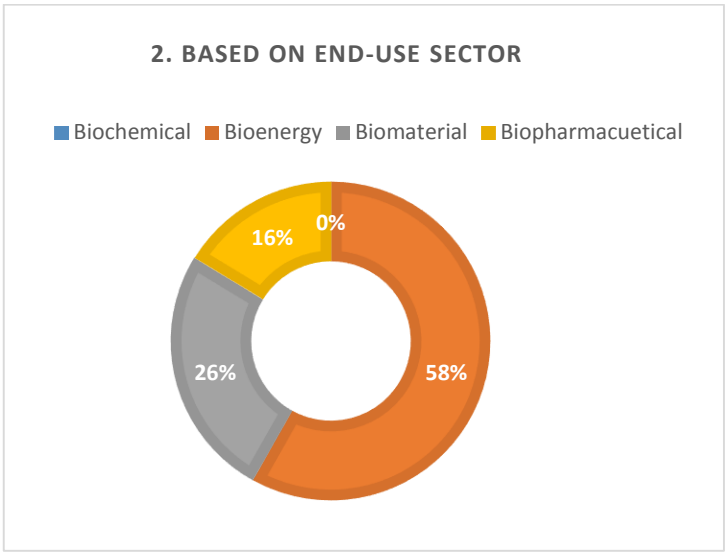

Figure A.I.18 Polish NFCs stakeholders mapping based on end-use sector

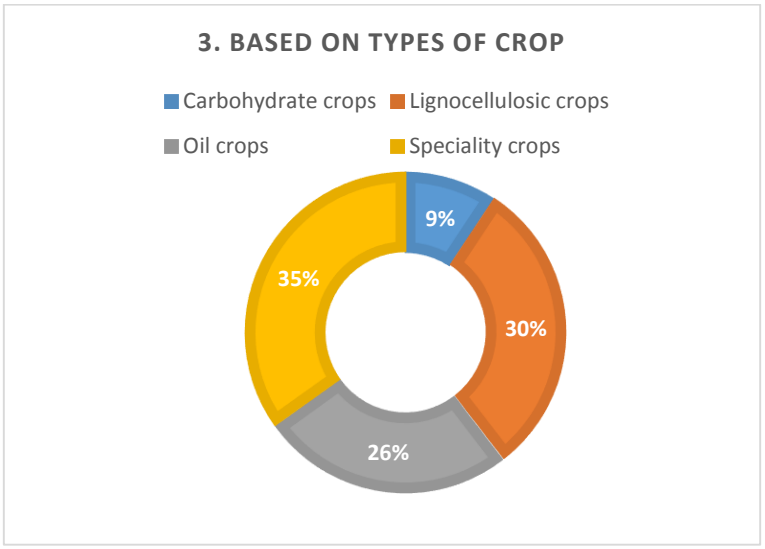

Figure A.I.19 Polish NFCs stakeholders mapping based on types of crop

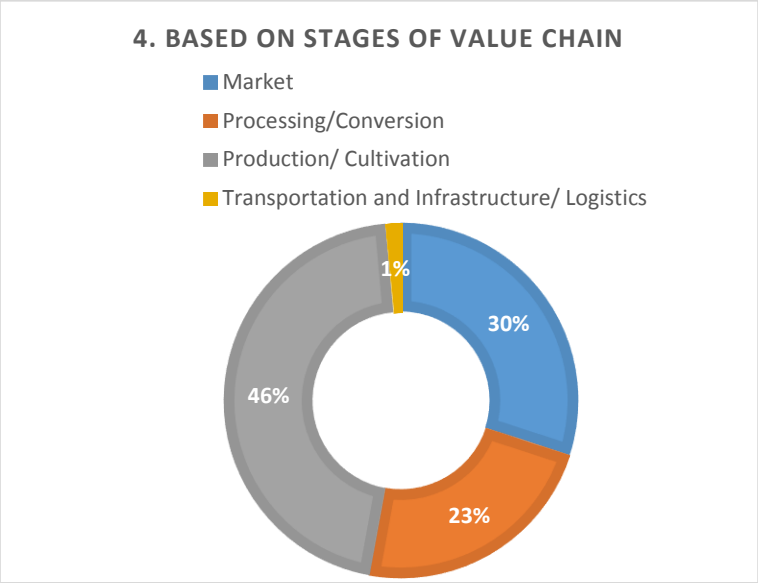

Figure A.I.20 Polish NFCs stakeholders mapping based on stages of value chain

Stakeholders mapping based on the crop type and stage of value chain

Polish stakeholders when mapped based on the type of crop and stage of value chain their involvement is minimal in pre-production and transportation/logistic stage of the value chain. Similarly, there are stakeholders involved in production and cultivation of all other crop types except for the speciality crops, however more stakeholders are seen in the market development of products from speciality crops. There is least number of stakeholders working on carbohydrate crops compared to other crop types and gap is seen in processing and conversion stage of the value chain. This does not mean there are no stakeholders working this end of the value chain but illustrates the likelihood of less number of stakeholders involved at present.

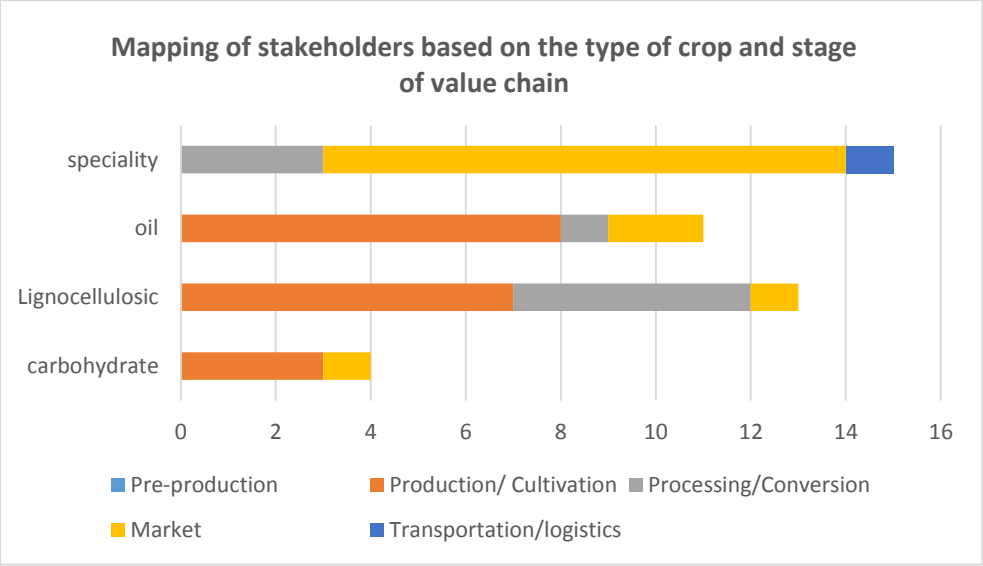

Figure A.I.21 Polish NFCs stakeholders mapping based on the type of crop and stages of value chain

Stakeholders mapping based on the end-use sector and stage of value chain

Polish stakeholders when mapped based on the end-use sector and stage of value chain they are involved in we can see that only bioenergy sector has the involvement of majority of the stakeholder for all the stages of the value chain whereas we see zero involvement in biochemical sector. Biopharmaceutical sector on the other hand has stakeholders involved in just the processing and conversion and market which shows that there is a possibility of engaging stakeholders in production and cultivation process. Similarly, in biomaterial sector we can see that there are fewer stakeholders involved in the production and cultivation compared to the market development. Therefore, this means there are gaps and opportunities to engage stakeholders in all stages of the value chain activities for all sectors in more balanced way.

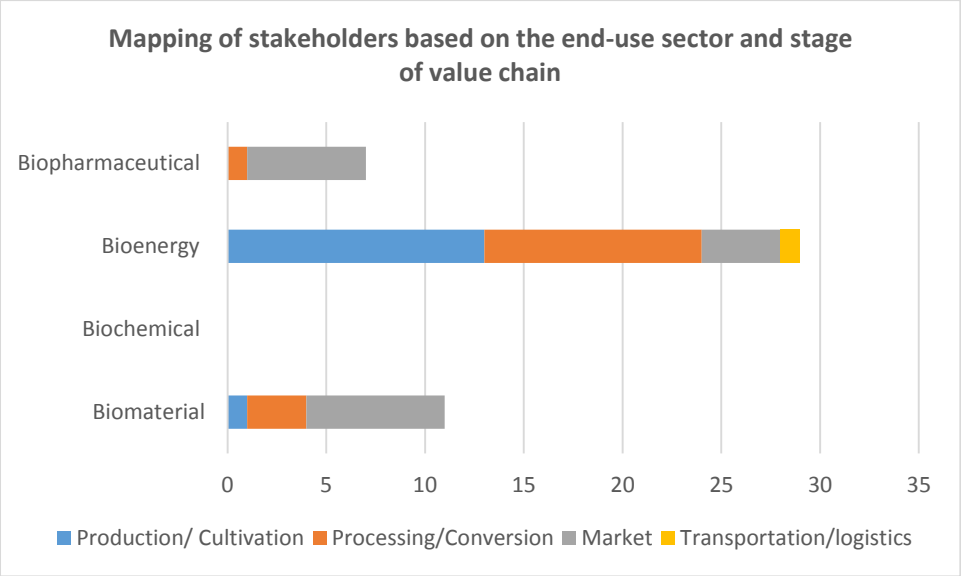

Figure A.I.22 Polish NFCs stakeholders mapping based on the end-use sector and stages of value chain

Stakeholders mapping based on the stages of value chain per crop type

Polish stakeholders when mapped based on the stages of value chain for all different crop types we can see below in Table 3 the area where concentration of stakeholders is high and where there is low participation. All stakeholders could not be mapped here because the type of crops they are working with is not exclusive to one.

Table A.I.3. Polish NFCs stakeholders mapping based on the end-use sector and stages of value chain

Crop type/Stages of Value chain	Pre-production	Processing/Conversion	Production/ Cultivation	Market
Speciality crops		University of Life Sciences in Lublin		Polish Biomass Association POLBIOM
		Institute of Fluid-Flow Machinery Polish Academy of Sciences		Polskie Stowarzyszenie Rolnictwa Zrównoważonego
		Chemprof		MAKE ME BIO S.C
				MK Natural Cosmetics
				Orientana
				Scandinavia Polska Sp. z o.o
				Herbapol-Lublin S.A.
				KZZ Herbapol w Krakowie SA
				Wrocławskie Zakłady Zielarskie „Herbapol" SA
				Poznańskie Zakłady Zielarskie, Herbapol S.A.
				Herbapol Warszawa Sp. z o. o
Lignocellulosic crops		Mazowiecki Park Naukowo Technologiczny - Park Spółdzielczy w Płońsku	Univeristy of Technoogy	BioEko Osnowo
		Kazimierz Wielki University	Institute of Soil Science and Plant Cultivation	
		Hollas	WARSAW UNIVERSITY OF LIFE SCIENCES – SGGW	
		INSTITUTE OF TECHNOLOGY AND LIFE SCIENCES	University of Warmia and Mazury in Olsztyn	
			Kujawsko-Pomorski Ośrodek Doradztwa Rolniczego w Minikowie	
		Bałtycka Agencja Poszanowania Energii	Pomorski Ośrodek Doradztwa Rolniczego w Lubaniu	

Carbohydrate crops			MAZOWIECKA IZBA ROLNICZA	Agrii
			Warmińsko – Mazurska Izba Rolnicza	
			Dolnośląska Izba Rolnicza	
Oil crops		Stowarzyszenie Krajowa Izba Biopaliw	West Pomeranian University of Technology Szczecin	
			Poznań University of Life Sciences	Polskie Stowarzyszenie Producentów Oleju
			University of Wrocław	NATURLEN SP. Z O.O.
			University of Agriculture in Krakow	
			UNIVERSITY OF RZESZÓW	
			Siedlce University	
			Stowarzyszenie Krajowa Izba Biopaliw	
			Krajowe Zrzeszenie Producentów Rzepaku i Roślin Białkowych	
			Pomorska Izba Rolnicza	
Not specified crop type		Polska Platforma Technologiczna Biogospodarki	Zachodniopomorski Ośrodek Doradztwa Rolniczego w Barzkowicach	IEO - Institute for Renewable Energy
		Gdańsk University of Technology	Łódzki Ośrodek Doradztwa Rolniczego z siedzibą w Bratoszewicach	Agroplus
		PEC Pisz	Krajowy Ośrodek Wsparcia Rolnictwa	BIOSFERA Sp. z o.o.
		AgroBioCluster	Polskie Towarzystwo Agronomiczne	Agroexpert Sp.z o.o.
		MPEC Olsztyn	Wielkopolski Ośrodek Doradztwa Rolniczego w Poznaniu	Polish Association for Agricultural Supply
		OPEC GRUDZIĄDZ Sp. z o.o.	Ministerstwo Rolnictwa i Rozwoju Wsi	
		Instytut Energii	Lubelski Ośrodek Doradztwa Rolniczego w Końskowoli	
			Lubuski Ośrodek Doradztwa Rolniczego	

			Śląski Ośrodek Doradztwa Rolniczego w Częstochowie	
			Dolnośląski Ośrodek Doradztwa Rolniczego we Wrocławiu	
			Stowarzyszenie Bioregion	
			Podlaski Ośrodek Doradztwa Rolniczego w Szepietowie	
			MODR Oddział Poświętne w Płońsku	
			Warmińsko-Mazurski Związek Rolników, Kółek i Organizacji Rolniczych	

Portugal

On mapping 86 stakeholders from Portugal (see Annex II, Table 7) based on their institutional capacity we got the following composition. We can see that farmer's community make up almost one third of the Portugal stakeholders, while Industries and businesses make up one quarter of the total stakeholders. Similarly, research and education make up 19% of the stakeholders while agricultural students make up 9%. The work in ongoing to collect more information on Portuguese stakeholders based on their relevant sector, type of NFCs and stage of NFCs value chain.

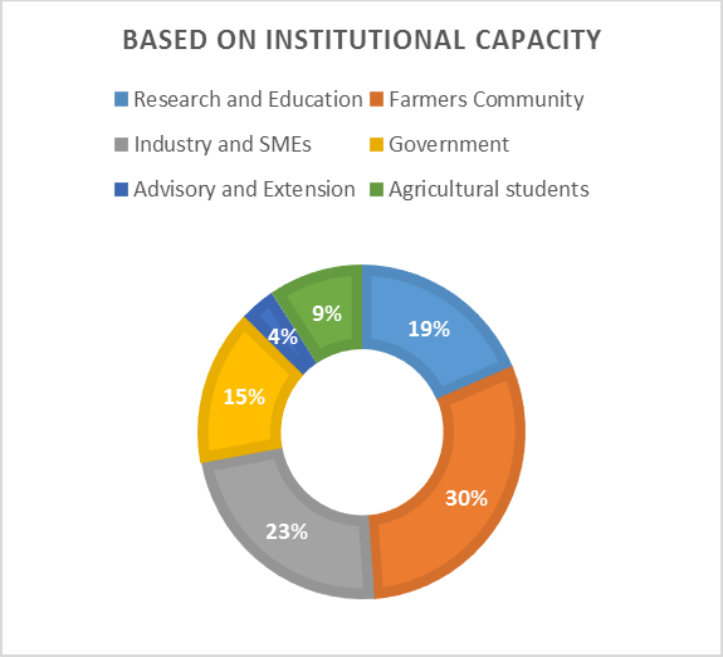

Figure A.I.23 Portuguese NFCs stakeholders mapped based on institutional capacity

Stakeholders mapping based on the crop type and stage of value chain

Work is ongoing

Stakeholders mapping based on the end-use sector and stage of value chain

Work is ongoing

Stakeholders mapping based on the stages of value chain per crop type

Work is ongoing

Romania

On mapping 70 stakeholders from Romania (see Annex II, Table 8) based on their institutional capacity as shown in figure 24, we found that industry and business makes up more than half, 62% of the stakeholders. This shows that the there is good environment for the uptake of the innovation which are near to practice as there seems to be a lot of interest from industries and businesses. Similarly, research and education makes up 14% while government and advisory and extension services make 17% of this group and 7% are farmers. The work in ongoing to collect more information on Romanian stakeholders based on their relevant sector, type of NFCs and stage of NFCs value chain.

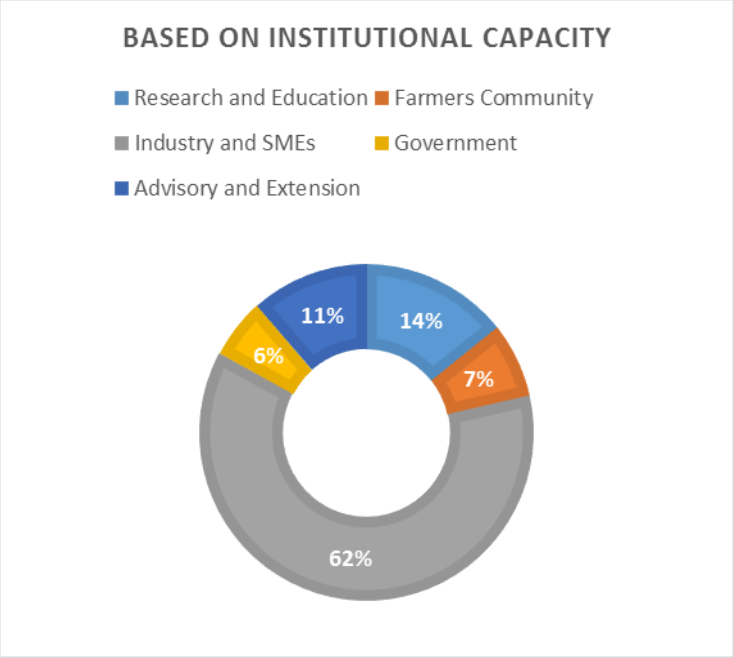

Figure A.I.24 Romanian NFCs stakeholders mapped based on institutional capacity

Stakeholders mapping based on the crop type and stage of value chain

Work is ongoing

Stakeholders mapping based on the end-use sector and stage of value chain

Work is ongoing

Stakeholders mapping based on the stages of value chain per crop type

Work is ongoing

Spain

On mapping 42 stakeholders from Spain (see Annex II, Table 9) based on their institutional capacity, as shown in Figure 25, farmers community make up 43% of the stakeholders. Similarly, government and advisory and extension service stakeholders together make up 36% of the stakeholders and only 19% of the stakeholders make up research and education, 2% make up industry and SMEs. The work in ongoing to collect more information on Spanish stakeholders based on their relevant sector, type of NFCs and stage of NFCs value chain.

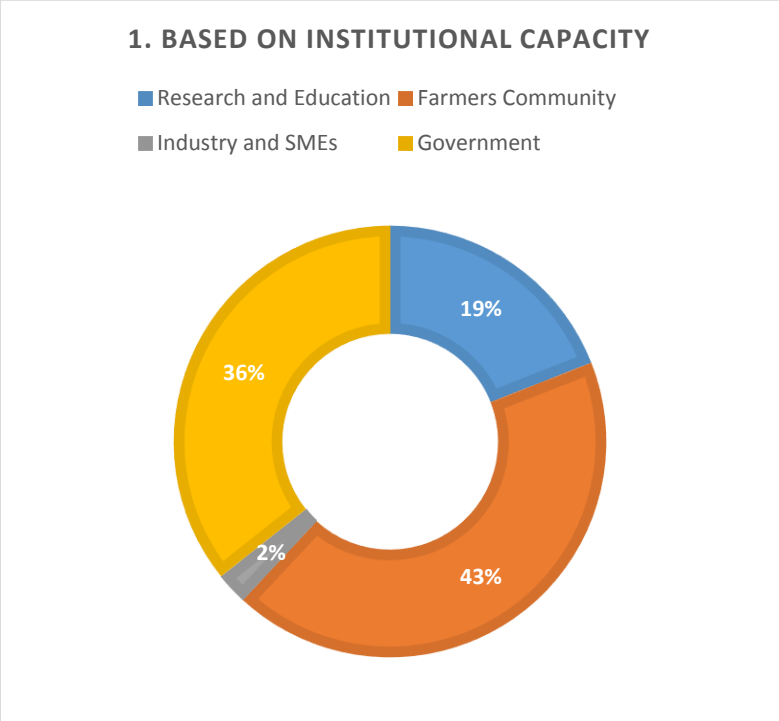

Figure A.I.25 Spanish NFCs stakeholders mapped based on institutional capacity

Stakeholders mapping based on the crop type and stage of value chain

Work is ongoing

Stakeholders mapping based on the end-use sector and stage of value chain

Work is ongoing

Stakeholders mapping based on the stages of value chain per crop type

Work is ongoing

The United Kingdom

On mapping 44 stakeholders from United Kingdom (see Annex, Table 10), based on their institutional capacity, as shown in figure 26, we found that 40% of the stakeholders are from research and education followed by 24% of industries and businesses. Similarly, 18% from government and advisory and extension services. The work is ongoing to collect additional information on stakeholders about their relevant sector, type of NFCs and stage of NFCs value chain.

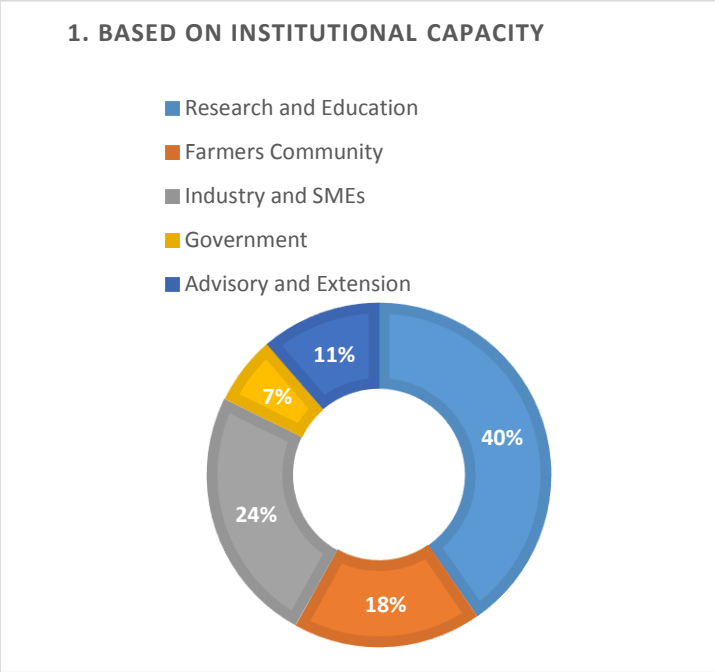

Figure A.I.26 The United Kingdom NFCs stakeholders mapped based on institutional capacity

Stakeholders mapping based on the crop type and stage of value chain

Work is ongoing

Stakeholders mapping based on the end-use sector and stage of value chain

Work is ongoing

Stakeholders mapping based on the stages of value chain per crop type

Work is ongoing

Annex II Contact details of PANACEA stakeholders

Table AII.1. France NFCs stakeholders

	Name of the Institution	Institutional Capacity
1	Terres Univia	Farmers Union
2	Terres Inovia	Research Institutions
3	Sofiprotéol	Investor
4	ATEE - Club Biogaz	Research and Innovation networks
5	Cosmetic Valley	Research and Innovation networks
6	Chambre Agriculture Seine-Maritime	Advisory and extension services
7	INEOS - Champlor	Industry
8	Services Coop de France	Advisory and extension services
9	ITERG	Research Institutions
10	Pôle IAR	Research and Innovation networks
11	SAS PIVERT	Technology Platforms
12	SFEL	Research and Innovation networks
13	FOP	Farmers Union
14	ADEBIOTECH	Research and Innovation networks
15	Chambre Agriculture Hauts de France	Advisory and extension services
16	IFP Energies Nouvelles	Research Institutions
17	FNCG	Research and Innovation networks
18	DGE - Bureau de la chimie et des biotechnologies	Policy Makers and Regulating Body - Circular Economy
19	IMPROVE	Technology Platforms
20	ADEME	Government Body
21	France AgriMer	Government Body
22	CVA - Centre de Valorisation des AgroRessources	Research and Innovation networks
23	INRA	Research Institutions
24	OLEON	Bio-based Industry
25	ENSCPB	Agricultural students
26	MEPI - Maison Européenne des Procédés Innovants	Technology Platforms
27	OLEAD	Technology Platforms
28	UNIKALO	Industry
29	Groupe Avril	Industry
30	FRD	Technology Platforms
31	Association Chimie du Végétal	Research and Innovation networks
32	UniLassale	Agricultural students
33	BioSCO	Businesses
34	AgroParisTech	Agricultural students
35	Agri Sud-Ouest innovation	Research and Innovation networks
36	Bordeaux Sciences Agro	Agricultural students
37	Vet Agro Sup	Agricultural students

38	CIRAD	Research Institutions
39	IRTSEA	Research Institutions
40	Bureau Bioéconomie - Ministère Agriculture	Policy Makers and Regulating Body - Agriculture
41	CEA EA	Research Institutions
42	IFPEN	Research Institutions
43	INSA	Universities
44	APCA	Advisory and extension services
45	COOPEDOM	Farmers cooperatives
46	VIVESCIA	Farmers cooperatives
47	ARTERRIS Innovations	Farmers cooperatives
48	EURALIS	Farmers cooperatives
49	CRITT Bio Industries	Technology centers
50	InVivo	Farmers Union
51	Bourgogne Pellets	Farmers cooperatives
52	RAGT energie	Farmers cooperatives
53	France Miscanthus	Advisory and extension services
54	UTT	Universities
55	Agro-Transfert Ressources et Territoires	Advisory and extension services
56	AELERD	Bio-based Industry
57	Alkern	Businesses
58	Axereal	Farmers Union
59	Ciments Calcia	Businesses
60	Eurosorgho	Advisory and extension services
61	FAURECIA INTERIOR Industrie	Businesses
62	PHYTORESTORE	Bio-based Industry
63	NATUREPLAST	Businesses
64	ADDIPLAST	Businesses
65	ECOTECHNILIN	Businesses
66	NOVABIOM	Businesses
67	COOPENERGIE	Farmers cooperatives
68	Laboulet Semences	Businesses
69	APRIL Group	Businesses
70	SAS PIVERT	Businesses
71	BIOSYNTHIS	Businesses

Table AII.2. Greece NFCs stakeholders

	Name of the Institution	Institutional Capacity
1	Aggelakis Company, SME	Businesses
2	Agrodomi, SME, Agricultural services	Advisory and extension services
3	KANNABIO, social cooperative on organic hemp	Advisory and extension services
4	Democritus University of Thrace	Universities
5	Centre for Crop Protection & Agricultural Suppliers LTD	Advisory and extension services
6	Econopoulou Maria, farmer	Farmers
7	AGROFIT, Theothoropoulou Vasiliki	Farmers
8	Agricultural suppliers GEORGIA KAKALETRI	Advisory and extension services
9	Spyropoulos Georgios	Farmers
10	ELIN BIOFUELS S.A. (large company)	Businesses
11	HELECTOR	Businesses
12	NEA GI (company selling seeds, fertilizers, etc.)	Businesses
13	LOYFOPOULOS CHRISTOS (company selling seeds, fertilizers, etc.)	Businesses
14	MPOURAZANAS ANASTASIOS (company selling seeds, fertilizers, etc.)	Businesses
15	ARCHONTIS VASILEIOS (company selling seeds, fertilizers, etc.)	Businesses
16	TSINOULIS GEORGIOS (company selling seeds, fertilizers, etc.)	Businesses
17	AGROFRONTIDA LARISAS (company selling seeds, fertilizers, etc.)	Businesses
18	PHYTOENERGY (company selling seeds, fertilizers, etc.)	Businesses
19	Aggelou Athanassios (company selling seeds, fertilizers, etc.)	Businesses
20	Agricultural Univerity of Thessaly	Universities
21	Agricultura Cooperative Chalastra A	Farmers cooperatives
22	ELGO DIMITRA	Research Institutions
23	CHIMAR HELLAS (SME)	Businesses
24	FIBRALCO (SME)	Businesses
25	THEOGENIS, social cooperative on organic hemp	Farmers cooperatives
26	Union of Farmers' of Orestiada	Farmers Union
27	Agricultura Cooperative Chalastra A	Farmers cooperatives
28	Agricultural University of Athens	Universities
29	Agricultural Cooperative of Xanthi	Farmers cooperatives
30	EBROGAIA (sme selling seeds, pesticides, fertilizers, etc.)	Businesses
31	Union of Greek Seed Producers	Farmers Union
32	NOVAFARM (sme selling seeds, pesticides, fertilizers, etc.)	Businesses
33	CERTH	Research Institutions
34	ANKA (SME pellets producer)	Businesses

35	Orizon (SME consultant company)	Advisory and extension services
36	PRAXIS	Research and Innovation networks
37	QPLAN	Research and Innovation networks
38	ELINA (SME)	Businesses
39	AGROTYPOS S.A. (journal focus on agriculture)	
40	BIO2CHP (SME)	Businesses
41	INASO-PASEGES	Farmers cooperatives
42	ENVIMA (Consultants)	Advisory and extension services
43	Union of Farmers' of Ioannina	Farmers Union
44	Pireaous bank	Investor
45	METKA	Industry
46	Municipality of Alexandroupolis	Government Body
47	Paper Industry	Industry
48	Papageorgiou Dimitrios	Farmers
49	Ministry of Agricultural Development	Government Body
50	Theodoros Troklos	Farmers
51	Municipality of Volos	Government Body
52	BUILDECO	Businesses
53	Aristotelion University	Universities
54	Iliaxtida Energeiaki	Advisory and extension services
55	PPC renewables (puplic power cooporation for renewables)	Industry
56	Theodoros Tsimos (agricultural engineer)	Advisory and extension services
57	Evgenia Makridou (agricultural enginee)	Advisory and extension services
58	YPAITHROS (newspaper-journal on agriculture)	
59	GREEN AGENDA (newspaper - journal on agriculture)	
60	Union of Farmers' of Chalkidiki	Farmers cooperatives
61	Hellenic Biomass Association	
62	Pavlos Papadopoulos (private farm)	Farmers
63	AGROTECH SA (agricultural machinery)	Businesses
64	HYDRAVLIKI Hellenic pellets	Businesses
65	ENERGEIAKH SYNETAIRISTIKI KARDITSAS	Farmers cooperatives
66	ZIBENO I ENERGY SA (energy company)	
67	Kostas samiotis (owener of a private farm)	Farmers
68	Stratis Blassis (owener of a private farm)	Farmers
69	Manos Sergiadis (owener of a private farm)	Farmers
70	Othonas Papahioannou (owener of a private farm)	Farmers

Table AII.3. Italian NFCs stakeholders

	Name of the Institution	Institutional Capacity
1	ENEA - Laboratorio Sostenibilità, Qualità e Sicurezza delle Produzioni Agroalimentari	Research Institutions
2	ENEA - Laboratorio Biomasse e Biotecnologie per l'Energia	Research Institutions
3	ENEA - Laboratorio Tecnologie e Processi per le Bioraffinerie e la Chimica Verde	Research Institutions
4	CNR - Istituto per i sistemi agricoli e forestali del mediterraneo (ISAFOM)	Research Institutions
5	CNR - Istituto per la Valorizzazione del Legno e delle Specie Arboree (IVALSA)	Research Institutions
6	CRPA - Centro ricerche produzioni animali S.p.A.	Research Institutions
7	FMACH - Unità Biomasse ed Energie Rinnovabili	Research Institutions
8	CIRCE - Centro de investigación de recursos y consumos energéticos	Research Institutions
9	CIRCE - Centro de investigación de recursos y consumos energéticos	Research Institutions
10	CREA - Centro di ricerca per le colture industriali (CREA-CIN)	Research Institutions
11	CREA - CentroForeste e Legno	Research Institutions
12	JRC - Joint Research Centre	Research Institutions
13	CERTH - Centre for Research & Technology Hellas	Research Institutions
14	ZLC - Zaragoza Logistics Center	Research Institutions
15	Nova Institute	Research Institutions
16	Bioma Technologies	Research Institutions
17	UNIVPM - Università Politecnica delle Marche. Laboratorio Biomasse	Universities
18	UNIFG - Università di Foggia. Dipartimento di Scienze Agrarie, degli Alimenti e dell'Ambiente	Universities
19	UNIBA - Università degli Studi di Bari. Dipartimento di Scienze Agro Ambientali e Territoriali (Di.S.A.A.T.)	Universities
20	UNITUS - Università degli Studi della Tuscia. Dipartimento di Scienze Agrarie e Forestali (DAFNE)	Universities
21	UNIPG - CRB - Centro di Ricerca sulle Biomasse	Universities
22	UNITO - AGRINEW TECH	Universities
23	UNICT - Università di Catania. Dipartimento di Agricoltura Alimentazione e Ambiente	Universities
24	CREAR - Centro Interdipartimentale di Ricerca per le Energie Alternative e Rinnovabili Università di Firenze	Universities
25	RE-CORD - Renewable Energy Consortium for Research and Demonstration	Research and Innovation networks
26	ITABIA - Italian Biomass Association	Advisory and extension services
27	FIPER - Federazione Italiana Produttori di Energia da Fonti Rinnovabile	Advisory and extension services

28	CIB - Consorzio Italiano Biogas	Advisory and extension services
29	AIEL - Associazione Italiana Energie Agroforestali	Advisory and extension services
30	Chimica Verde Bionet	Advisory and extension services
31	FIRE - Federazione Italiana per l'uso Razionale dell'Energia	Advisory and extension services
32	CIA - Confederazione italiana agricoltori	Farmers Union
33	CIA Umbria	Farmers Union
34	Confagricoltura - Confederazione Generale dell'Agricoltura Italiana	Farmers Union
35	ENAPRA – Ente Formazione Confagricoltura	Farmers Union
36	Coldiretti	Farmers Union
37	Associazione le Fattorie del Sole-Coldiretti	Farmers Union
38	PASEGES - Panhellenic Confederation of Unions of Agricultural Cooperatives	Farmers Union
39	UNIMA - Unione Nazionale Imprese di Meccanizzazione Agricola	Industry
40	ENAMA - Ente Nazionale per la Meccanizzazione Agricola	Rural Development National Authorities
41	TFZ - Technology and Support Centre	Rural Development National Authorities
42	CESAR - Centro per lo Sviluppo Agricolo e Rurale	Rural Development National Authorities
43	FAO	Government Body
44	FAO	Government Body
45	FAO-GBEP	Government Body
46	MATTM - Ministero dell'ambiente e della tutela del territorio e del mare	Policy Makers and Regulating Body -Circular Economy
47	MATTM - Ministero dell'ambiente e della tutela del territorio e del mare	Policy Makers and Regulating Body -Circular Economy
48	MATTM - Ministero dell'ambiente e della tutela del territorio e del mare	Policy Makers and Regulating Body -Circular Economy
49	Serena Ferri	Agricultural students
50	Simone Salvatori	Agricultural students
51	Cluster Spring	Policy Makers and Regulating Body -Circular Economy
52	BIOCHEMTEX	Bio-based Industry
53	MATER BIOTECH	Bio-based Industry
54	MATRICA	Bio-based Industry
55	NOVAMONT	Bio-based Industry
56	Berti Macchine Agricole S.p.A.	Businesses
57	Facma s.r.l.	Businesses
58	Falc s.r.l.	Businesses
59	Nobili S.p.A.	Businesses

60	Omarv	Businesses
61	Peruzzo s.r.l.	Businesses
62	Serrat	Businesses
63	Tierre	Businesses
64	ONG snc di Naldoni Domenico & C.	Businesses
65	Rinieri	Businesses
66	Orsi	Businesses
67	COPROB	Farmers cooperatives
68	Mycoplast snc	Bio-based Industry
69	WIP - Renewable Energy	Advisory and extension services
70	Helector	Advisory and extension services

Table AII.4. Lithuania NFCs stakeholders

	Name of the Institution	Institutional Capacity
1	Farm of Mantvydas Drupas	Farmers
2	Farm of Stasys Stačkūnas	Farmers
3	Farm of Gintautas Navickas	Farmers
4	Farm of Albinas Navickas	Farmers
5	Farm of Jūrate Janušauskiene	Farmers
6	Farm of Arminas Teišerskis	Farmers
7	Aleksandro Stulginskio universitetas	Universities
8	Aleksandro Stulginskio universitetas	Universities
9	LAMMC Vokės filialas	Research Institutions
10	LAMMC Vėžaičių filialas	Research Institutions
11	Lithuanian Ministry of Agriculture	Policy Makers and Regulating Body -Circular Economy
12	Farm of Saulius Daniulis	Farmers
13	Farm of Antanas Daniulis	Farmers
14	Farm of Kęstutis Zinkevičius	Farmers
15	Farm of Mindaugas Skruzdys	Farmers
16	Farm of Sigitas Vėjelis	Farmers
17	Baltijos pluoštinių kultūrų augintojų ir perdirbėjų asociacija	Farmers Union
18	UAB „Agrolitpa“	Businesses
19	ŽŪB Berčiūnai	Farmers
20	Lietuvos žemės ūkio konsultavimo tarnyba	Advisory and extension services
21	Urtė Stulpinaitė	Agricultural students
22	Egle Tauraite	Agricultural students
23	Lithuanian biomass association LITBIOMA	Bio-based Industry
24	Lithuanian grain growers association	Farmers cooperatives
25	UAB "Kurana"	Bio-based Industry
26	UAB "Mestila"	Bio-based Industry
27	Martynas Puidokas	Farmers
28	UAB "Modus goup"	Bio-based Industry
29	Klaipeda University	Universities
30	Lithuanian Energy Institute	Bio-based Industry

31	UAB "Enerstena"	Industry
32	Lithuanian Confederation of Industrialists	Businesses
33	Mantas Vilionis	Farmers
34	Rimasntas Gaidelis	Farmers
35	Lietuvos grūdų perdirbėjų asociacija	Farmers Union
36	Chamber of Agriculture of the Republic of Lithuania	Advisory and extension services
37	AB "Amilina"	Bio-based Industry
38	UAB "Euromediena"	Bio-based Industry
39	Lithuanian Farmers' Union	Farmers Union
40	Association of Lithuanian Agricultural Companies	Farmers cooperatives
41	Kaunas University of technology	Universities
42	Vytautas Magnus University	Universities
43	CENTER FOR PHYSICAL SCIENCES AND TECHNOLOGY	Research Institutions
44	Ministry of Economy of the Republic of Lithuania	Policy Makers and Regulating Body -Circular Economy
45	National Paying Agency under the Ministry of Agriculture of the Republic of Lithuania	Rural Development National Authorities
46	Ministry of Environment of the Republic of Lithuania	Policy Makers and Regulating Body -Waste
47	Invest Lithuania	Research and Innovation networks
48	Lithuanian Innovation Centre	Research and Innovation networks
49	Institute of Agriculture	Research Institutions
	Birute Vaitelyte	Farmers
50	AMMIA	Research and Innovation networks
51	Santaka Valley	Research and Innovation networks
52	Nemunas Valley	Research and Innovation networks
53	Jūratė Ramanauskienė	Farmers
54	Rasa Radžiūnienė	Farmers

55	Valdas pupeikis	Farmers
56	Dainius Vyčas	Farmers
57	Gediminas Kontrimavičius	Farmers
58	Mantas Župerka	Farmers
59	UAB „Barzdų agro”	Farmers
60	Žūk „mūsų ūkis”	Farmers
61	Giedrius Daugėla	Farmers
62	Aurimas garlauskas	Farmers
63	Ovidijus Pečeliūnas	Farmers
64	Raimonda Sandaraite	Farmers
65	UAB "ART21"	Advisory and extension services
66	Lietuvos sėklininkystės asociacija	Research and Innovation networks
67	AB „AUGA group”	Farmers cooperatives
68	Acorus calamus/Svencioniu vaistazoles	Bio-based Industry
69	Upytes eksperimentinis ukis	Farmers
70	Dotnuvos eksperimentinis ukis	Farmers

Table AII.5. The Netherlands NFCs Stakeholders

1	Acress	Research Institution
2	ADM	Industry
3	AGRIX	industry
4	AKZO Nobel	Industry
5	Ashland	industry
6	Avantium	Industry
7	AVEBE	industry
8	AVIH	Research Institution
9	biobound	Industry
10	Biopetrol	Industry
11	Cargill	Industry
12	CE Delft	Research Institution
13	Commissie Duurzaamheids-vraagstukken Biomassa	Government Body
14	Corbion	Industry
15	Cosun	Industry
16	Cradle Crops	Industry
17	Croda	Industry
18	De Groot Vroomshoop	Industry
19	DESSO	Industry
20	DSM	Industry
21	DUMEA	Research Institution
22	Dunagro	Industry
23	DuPont	Industry
24	Dutch Bioenergy Association (Platform Bio-energie)	Government Body
25	ECN	Research Institution
26	Ecoboards	industry
27	Eco-logisch	Industry
28	Eltomation	Industry
29	Eneco	Business
30	Energie Nederland	Business
31	E-On Benelux	Business
32	Essent/RWE	Business
33	Essent/RWE	Business
34	Faaij	Industry
35	FNLI (Food Industry Federation)	Industry
36	Forbo	Industry
37	GDF Suez (ENGIE)	Business
38	Grassa	Industry
39	Haven Rotterdam	Business

40	Hempcrete	Industry
41	Hempflax	Industry
42	Homatherm	Industry
43	Isobouw	Industry
44	Isovlas	Industry
45	Kappa Roermond	industry
46	Kenniscentrum Papier en karton	Research institution
47	Klasmann Deilmann	industry
48	Lefeber	industry
49	Linex	Industry
50	LTO	Farmers Community
51	Mayr melnhof	industry
52	Millvision	Industry
53	Ministry of economic affairs and environment	Government Body
54	Ministry of agriculture, nature and food quality	Government Body
55	Ministry of Infrastucture and waterways	Government Body
56	Miscancell	Industry
57	Miscanthus groep	industry
58	Natuur en Milieu	Business
59	Neste oil	Industry
60	New Foss	industry
61	NPSP	industry
62	Nuon	Business
63	Oxfam Novib	NGO
64	pantanova	Consultancy
65	Paperfoam	industry
66	Paperwise	Industry
67	Papierfabriek Schut	industry
68	Parenco	industry
69	Pavatex	Industry
70	Platform Bio-energie	Research Institution
71	probos	Research institution
72	Productschap MVO -The Netherlands Oils and Fats	Industry
73	Rabobank	Bank
74	Rinos	industry
75	Rolsma	industry
76	RVO	Government Body
77	Shell	Industry
78	Smurfit kappa	Industry
79	Stex fibers	Industry
80	Sun Oil	Industry

81	Synbra	Industry
82	Ten cate	industry
83	Ten Kate Vetten	Industry
84	Universiteit Utrecht	University
85	Ursa Paint	Industry
86	Van Houtum	Industry
87	Van Wijhe verf	Industry
88	VNBI	Bio-industry
89	VNCI	Industry organization
90	VNP	Industry organization
91	VNPI (Vereniging Nederlandse Petroleum Industrie)	Industry organization
92	Wageningen Environmental Research	Research Institution
93	Wageningen Food and Biobased Research	Research Institution
94	Wageningen Univeristy	University
95	Warmteplan	Industry
96	Xiriton	Industry
97	ZLTO	Farmers organisation

Table AII.6. Poland NFCs Stakeholders

	Name of the Institution	Institutional Capacity
1	Institute of Soil Science and Plant Cultivation	Advisory and extension services
2	WARSAW UNIVERSITY OF LIFE SCIENCES – SGGW, Wydział Rolnictwa i Biologii	Agricultural students
3	Kazimierz Wielki University	Agricultural students
4	INSTITUTE OF TECHNOLOGY AND LIFE SCIENCES	Advisory and extension services
5	Univeristy of Technoogy	Agricultural students
6	West Pomeranian University of Technology Szczecin	Agricultural students
7	Poznań University of Life Sciences	Agricultural students
8	University of Wrocław	Agricultural students
9	University of Warmia and Mazury in Olsztyn	Agricultural students
10	University of Agriculture in Krakow	Agricultural students
11	UNIVERSITY OF RZESZÓW	Agricultural students
12	University of Life Sciences in Lublin	Agricultural students
13	Institute of Fluid-Flow Machinery Polish Academy of Sciences	Advisory and extension services
14	Siedlce University	Agricultural students
15	Agroplus	Advisory and extension services
16	BIOSFERA Sp. z o.o.	Advisory and extension services
17	Quercus	Businesses
18	Polish Biomass Association POLBIOM	Advisory and extension services
19	The Polish Chamber of Biomass	Advisory and extension services
20	Polish Association for Agricultural Supply	Farmers Union
21	Polskie Stowarzyszenie Rolnictwa Zrównoważonego "ASAP" j	Farmers cooperatives
22	Chemprof	Bio-based Industry
23	Agroexpert Sp.z o.o.	Advisory and extension services
24	Instytut Energii	Businesses
25	IEO - Institute for Renewable Energy	Advisory and extension services
26	Gdańsk University of Technology	Advisory and extension services
27	Krajowe Zrzeszenie Producentów Rzepaku i Roślin Białkowych	Farmers cooperatives
28	OPEC GRUDZIĄDZ Sp. z o.o.	Consumers
29	MPEC Olsztyn	Consumers
30	PEC Pisz	Consumers
31	Stowarzyszenie Krajowa Izba Biopaliw	Bio-based Industry
32	Polskie Stowarzyszenie Producentów Oleju	Industry
33	AgroBioCluster	Technology Platforms
34	Warmińsko – Mazurska Izba Rolnicza	Rural Development National Authorities
35	MAZOWIECKA IZBA ROLNICZA	Rural Development National Authorities
36	Dolnośląska Izba Rolnicza	Rural Development National Authorities

37	Pomorska Izba Rolnicza	Rural Development National Authorities
38	BioEko Osnowo	Businesses
39	Bałtycka Agencja Poszanowania Energii	Businesses
40	MAKE ME BIO S.C.	Businesses
41	MK Natural Cosmetics	Businesses
42	Orientana	Businesses
43	Herbapol-Lublin S.A.	Businesses
44	KZZ Herbapol w Krakowie SA	Businesses
45	Wrocławskie Zakłady Zielarskie „Herbapol" SA	Businesses
46	Poznańskie Zakłady Zielarskie, Herbapol S.A.	Businesses
47	Herbapol Warszawa Sp. z o. o.	Businesses
48	Warmińsko - Mazurski Ośrodek Doradztwa Rolniczego w Olsztynie	Advisory and extension services
49	Pomorski Ośrodek Doradztwa Rolniczego w Lubaniu	Advisory and extension services
50	Kujawsko-Pomorski Ośrodek Doradztwa Rolniczego w Minikowie	Advisory and extension services
51	Hollas	Bio-based Industry
52	Agrii	Businesses
53	Ministerstwo Rolnictwa i Rozwoju Wsi	Policy Makers and Regulating Body -Agriculture
54	Krajowy Ośrodek Wsparcia Rolnictwa	Rural Development National Authorities
55	Zachodniopomorski Ośrodek Doradztwa Rolniczego w Barzkowicach	Advisory and extension services
56	Wielkopolski Ośrodek Doradztwa Rolniczego w Poznaniu	Advisory and extension services
57	Polskie Towarzystwo Agronomiczne	Universities
58	Lubelski Ośrodek Doradztwa Rolniczego w Końskowoli	Advisory and extension services
59	Łódzki Ośrodek Doradztwa Rolniczego z siedzibą w Bratoszewicach	Advisory and extension services
60	Lubuski Ośrodek Doradztwa Rolniczego	Advisory and extension services
61	Śląski Ośrodek Doradztwa Rolniczego w Częstochowie	Advisory and extension services
62	Dolnośląski Ośrodek Doradztwa Rolniczego we Wrocławiu	Advisory and extension services
63	Stowarzyszenie Bioregion	Farmers Union
64	NATURLEN SP. Z O.O.	Businesses
65	Scandinavia Polska Sp. z o.o	Businesses
66	Podlaski Ośrodek Doradztwa Rolniczego w Szepietowie	Advisory and extension services
67	MODR Oddział Poświętne w Płońsku	Advisory and extension services
68	Mazowiecki Park Naukowo Technologiczny - Park Spółdzielczy w Płońsku	Technology centers
69	Polska Platforma Technologiczna Biogospodarki	Technology Platforms
70	Warmińsko-Mazurski Związek Rolników, Kółek i Organizacji Rolniczych	Farmers Union

Table AII.7. Portugal NFCs Stakeholders

	Name of the Institution	Institutional Capacity
1	Escola Superior Agrária de Santarém	Agricultural students
2	Escola Superior Agrária de Castelo Branco	Agricultural students
3	Escola Superior Agrária de Viseu	Agricultural students
4	Escola Superior Agrária de Coimbra	Agricultural students
5	Escola Superior Agrária de Elvas	Agricultural students
6	Escola Superior Agrária de Beja	Agricultural students
7	Escola Superior Agrária de Bragança	Agricultural students
8	Escola Superior Agrária de Ponte de Lima	Agricultural students
9	Instituto Politécnico de Portalegre	Universities
10	Instituto Superior de Educação e Ciências	Universities
11	Faculdade de Ciências e Tecnologia/UNL	Universities
12	Instituto Superior de Agronomia/UL	Universities
13	Universidade de Évora	Universities
14	Universidade de Trás-os-Montes e Alto Douro	Universities
15	Universidade do Minho	Universities
16	Universidade do Porto	Universities
17	Universidade de Aveiro	Universities
18	Universidade da Beira Interior	Universities
19	Universidade do Algarve	Universities
20	Universidade de Coimbra	Universities
21	Universidade Católica Portuguesa - Escola Superior de Biotecnologia	Universities
22	DGADR - Direção-Geral de Agricultura e Desenvolvimento Rural	Government Body
23	Instituto de Financiamento da Agricultura e Pescas,I.P - IFAP	Government Body
24	Ministério da Agricultura, Florestas e Desenvolvimento Rural	Government Body
25	DGEG - Direção-Geral de Energia e Geologia	Government Body
26	Rede Rural Nacional	Rural Development National Authorities
27	Gabinete de Planeamento, Políticas e Administração Geral	Policy Makers and Regulating Body - Agriculture
28	Direcção Regional de Agricultura e Pescas do Norte	Policy Makers and Regulating Body - Agriculture

29	Direcção Regional e Agricultura e Pescas do Centro	Policy Makers and Regulating Body - Agriculture
30	Direcção Regional de Agricultura e Pescas de Lisboa e Vale do Tejo	Policy Makers and Regulating Body - Agriculture
31	Direcção Regional de Agricultura e Pescas do Alentejo	Policy Makers and Regulating Body - Agriculture
32	Direcção Regional de Agricultura e Pescas do Algarve	Policy Makers and Regulating Body - Agriculture
33	Autoridade de Gestão do PRODERAM 2020	Policy Makers and Regulating Body - Agriculture
34	Direção Regional do Desenvolvimento Rural	Policy Makers and Regulating Body - Agriculture
35	Confederação dos Agricultores de Portugal	Farmers cooperatives
36	Associação dos Jovens Agricultores de Portugal	Farmers cooperatives
37	Associação de Agricultores do Ribatejo	Farmers cooperatives
38	Associação dos Agricultores do Distrito de Setúbal	Farmers cooperatives
39	Confederação Nacional de Agricultura	Farmers cooperatives
40	Agrobio - Associação Portuguesa de Agricultura Biológica	Farmers cooperatives
41	Associação de Agricultores de Charneca	Farmers cooperatives
42	Associação de Agricultores do Baixo Alentejo	Farmers cooperatives
43	Associação dos Agricultores do Distrito de Portalegre	Farmers cooperatives
44	CONFAGRI – Confederação Nacional das Cooperativas Agrícolas e do Crédito Agrícola de Portugal, CCRL	Farmers cooperatives
45	Sindicato da Agricultura, Alimentação e Florestas	Farmers Union
46	Sindicato dos Trabalhadores da Agricultura e das Indústrias de Alimentação, Bebidas e Tabacos de Portugal	Farmers Union
47	5RIOS - Associação Agrícola do Valado dos Frades	Farmers cooperatives
48	ACB - Associação de Agricultores do Campo Branco	Farmers cooperatives
49	AAIT - Associação Agrícola da Ilha Terceira	Farmers cooperatives
50	AAM - Associação de Agricultores da Madeira	Farmers cooperatives
51	AANT - Associação de Agricultores do Nordeste Transmontano	Farmers cooperatives
52	AAPM - Associação dos Agricultores do Planalto Mirandês	Farmers cooperatives
53	AARA - Associação dos Agricultores da Região de Alcobaça	Farmers cooperatives
54	AASM - Associação Agrícola de São Miguel	Farmers cooperatives

55	AASNE - Associação dos Agricultores da Serra e Norte da Estremadura	Farmers cooperatives
56	AATM - Associação de Agricultores de Trás-os-Montes	Farmers cooperatives
57	Agrotejo - União Agrícola do Norte do Vale do Tejo	Farmers cooperatives
58	FATA – Federação da Agricultura de Trás-os-Montes e Alto Douro	Farmers cooperatives
59	Sindicato da Agricultura, Alimentação e Florestas	Farmers Union
60	Sindicato dos Trabalhadores da Agricultura e das Indústrias de Alimentação, Bebidas e Tabacos de Portugal	Farmers Union
61	Bioenergy and Business Incubator of Portalegre	Research Institutions
62	INIAV - Instituto Nacional de Investigação Agrária e Veterinária	Research Institutions
63	Laboratório Nacional de Energia e Geologia	Research Institutions
64	CVR - Centro para a Valorização de Resíduos	Advisory and extension services
65	CBE - Centro da Biomassa para a Energia	Advisory and extension services
66	Prelis Smart Ceramics	Industry
67	Sonae	Industry
68	SISAV - Sistema Integrado de Tratamento e Eliminação de Residuos, S.A.	Technology centers
69	EGEO	Technology centers
70	Ecodeal - Gestão Integrada de Resíduos	Technology centers
71	EDP	Industry
72	Cimpor - Cimentos de Portugal, SGPS, S.A.	Industry
73	Secil	Industry
74	Pragosa Ambiente	Industry
75	The Navigator Company	Bio-based Industry
76	Celulose Beira Industrial (Celbi) S.A	Bio-based Industry
77	Centroliva - Indústria E Energia, S.A.	Bio-based Industry
78	CASAL & CARREIRA - BIOMASSA, S.A.	Bio-based Industry
79	CMCBiomassa	Bio-based Industry
80	Pinewells, S.A.	Bio-based Industry
81	Four Pellets	Bio-based Industry
82	Enerpellets	Bio-based Industry
83	Sovena Oilseeds Portugal, S.A.	Bio-based Industry
84	Tagol - Companhia de Oleaginosas do Tejo, S.A.	Bio-based Industry
85	Valorsul, S.A.	Bio-based Industry
86	LIPOR - Serviço Intermunicipalizado de Gestão de Resíduos do Grande Porto	

Table AII.8. Romania NFCs Stakeholders

	Name of the Institution	Institutional Capacity
1	UNITATEA ADMINISTRATIV TERITORIALĂ- JUDEŢUL CLUJ	Government Body
2	UNIVERSITATEA DE ȘTIINȚE AGRICOLE ȘI MEDICINĂ VETERINARĂ CLUJ NAPOCA	Universities
3	UNIVERSITATEA TEHNICĂ CLUJ NAPOCA	Universities
4	CAMERA DE COMERȚ ȘI INDUSTRIE	Advisory and extension services
5	S.C. MIB PRODCOM S.R.L.	Businesses
6	S.C. MARIFLOR PRODCOM S.R.L.	Businesses
7	S.C. AGRO TURDEAN IMPEX S.R.L.	Businesses
8	S.C. TEHNOFAVORIT S.A.	Businesses
9	S.C. CENTRUL AGRO TRANSILVANIA CLUJ S.A	Technology centers
10	S.C. EVEREST PRODSERV S.R.L	Businesses
11	S.C. ONCOS PROD S.R.L.	Bio-based Industry
12	S.C. GLOBAL DISTRIBUTION GROUP S.R.L.	Advisory and extension services
13	S.C. HYGIA CONSULT S.R.L	Advisory and extension services
14	S.C. XAMUS IMPORT EXPORT S.R.L.	Businesses
15	COOPERATIVA AGRICOLĂ SOMEȘ ARIEȘ	Farmers cooperatives
16	S.C. BONAS IMPORT EXPORT S.R.L.	Bio-based Industry
17	S.C. DLG INTERMARKETING S.R.L.	Advisory and extension services
18	PFA SECARĂ DOREL VIOREL	Businesses
19	S.C. MARCO INSTAL GRUP IMPEX S.R.L	Businesses
20	S.C. VOX PAPER S.R.L	Businesses
21	S.C. STAȚIUNEA DE CERCETARE-DEZVOLTARE AGRICOLĂ TURDA S.R.L.	Research Institutions
22	S.C. ORGANIC PLANT AGE S.R.L	Bio-based Industry
23	STAȚIUNEA DE CERCETARE DEZVOLTARE PENTRU POMICULTURĂ CLUJ	Research Institutions
24	STATIUNEA DIDACTICA EXPERIMENTALA-USAMV	Research Institutions
25	INSTITUTUL DE CERCETARI PENTRU INSTRUMENTAȚIE ANALITICĂ ICIA CLUJ-NAPOCA	Research Institutions
26	SC AGRO TV NETWORK SRL	Businesses
27	ASOCIAȚIA IJARUL	Farmers Union
28	PRIMĂRIA MUNICIPIULUI CĂMPIA-TURZI	Government Body
29	S.C. CONF TUB INOX S.R.L.	Businesses
30	S.C. GLUE CHIM PROD S.R.L	Businesses
31	BANCA TRANSILVANIA	Investor

32	S.C. HOSTVISION S.R.L	Businesses
33	S.C. MAFIR S.A.	Businesses
34	S.C. MECANICA HUEDIN S.A.	Businesses
35	S.C. TEHNO STAR PRODIMPEX S.R.L.	Bio-based Industry
36	S.C. TAF PRESOIL S.R.L.	Bio-based Industry
37	S.C. REFRESH PRINT S.R.L.	Advisory and extension services
38	S.C. GRATECO MEDICAL S.R.L.	Businesses
39	S.C. ANTOMA ADVERTSING S.R.L.	Businesses
40	ASOCIAȚIA PENTRU MARKETINGUL PRODUSELOR LOCALE-AMPLU	Advisory and extension services
41	S.C. CRAMA LA SALINA S.R.L	Bio-based Industry
42	S.C. SUPER LACTIS S.R.L	Bio-based Industry
43	S.C. BT BISON RANCH S.R.L	Businesses
44	S.C. STUPARUL PUNCT RO S.R.L	Bio-based Industry
45	SC AGRO COSM FAN SRL	Bio-based Industry
46	INSTITUTUL NAȚIONAL DE CERCETARE-DEZVOLTARE PENTRU TEHNOLOGII IZOTOPICE ȘI MOLECULARE CLUJ-NAPOCA	Research Institutions
47	S.C. COSM-FAN CARMANGERIE S.R.L.	Bio-based Industry
48	S.C. FOOD TRANSILVANIA MARKET S.R.L.	Consumers
49	S.C. FABRICA DE BRÂNZETURI TRANSILVANIA S.R.L.	Bio-based Industry
50	ASOCIAȚIA CRESCĂTORILOR DE OVINE ȘI CAPRINE CLUJ	Farmers Union
51	S.C. DIOSAN BIOPROD SRL-D	Bio-based Industry
52	FUNDATIA OPEN FIELDS	Advisory and extension services
53	SC MIK A I IMPEX SRL	Businesses
54	SC SAFETY BROKER SRL	Investor
55	FUNDAȚIA CIVITAS PENTRU SOCIETATEA CIVILĂ-FILIALA CLUJ NAPOCA	Advisory and extension services
56	ACPPA ASOCIATIA CRISANA	Farmers Union
57	ASOCIATIA PRODUS DE CLUJ	Farmers Union
58	SC NUTRITIN SRL	Bio-based Industry
59	SC AGROIND CAUACEU SA	Businesses
60	UNIVERSITATEA BABEȘ-BOLYAI PRIN FACULTATEA DE ȘTIINȚE ECONOMICE ȘI GESTIUNEA AFACERILOR	Universities
61	AGENȚIA DE DEZVOLTARE REGIONALĂ NORD-VEST	Rural Development National Authorities
62	PRIMARIA CLUJ- NAPOCA	Government Body
63	SC NADO&CO PMN SRL	Businesses
64	BORZ MARIUS DUMITRU-PFA	Businesses

65	SC STUDIO IMPRESS DESIGN SRL	Businesses
66	SC AGROSEM IMPEX SRL	Businesses
67	SC BRONTO COMPROD SRL	Businesses
68	COLEGIUL TEHNIC RALUCA RIPAN	Universities
69	SC VES SA	Businesses
70	DIN ARDEAL SRL	Businesses

Table AII.9. Spain NFCs stakeholders

1	CIEMAT	Advisory and extension services
2	I.D.A.E.-Biomass	Advisory and extension services
3	IFAPA	Advisory and extension services
4	IMIDRA	Advisory and extension services
5	INIA-Bioeconony	Advisory and extension services
6	ITACYL	Advisory and extension services
7	ITAP	Advisory and extension services
8	MABEGONDO (XUNTA GALICIA)	Advisory and extension services
9	MASS BADIA	Advisory and extension services
10	NEIKER	Advisory and extension services
11	UPM- Agroenergy	Advisory and extension services
12	ACCIONA	Bio-based Industry
13	Juan Ignacio Labiano	Farmers
14	Luis Miguel Arregui	Farmers
15	Perico Echarte	Farmers
16	ACOPAEX	Farmers cooperatives
17	ACOR	Farmers cooperatives
18	ACTEL	Farmers cooperatives
19	AGROPAL	Farmers cooperatives
20	ALCAMANCHA	Farmers cooperatives
21	COCOPE	Farmers cooperatives
22	COOP San Miguel	Farmers cooperatives
23	Cooperativa Orvalaiz	Farmers cooperatives
24	Cooperativa Sesma	Farmers cooperatives
25	Cooperativa Urroz	Farmers cooperatives
26	Cooperativa Valdorba	Farmers cooperatives
27	GRUPO AN	Farmers cooperatives
28	UCOGAL	Farmers cooperatives
29	UAGN	Farmers Union
30	UPA	Farmers Union
31	AGRICULTURE MINISTRY	Government Body
32	AGRICULTURE MINISTRY	Government Body
33	GOBIERNO DE NAVARRA	Government Body
34	CAMELINA SPAIN	Research Institutions
35	FACTOR VERDE	Research Institutions
36	DESARROLLO RURAL	Rural Development National Authorities
37	AINIA	Technology centers
38	AVEBIOM	Technology centers
39	CENER	Technology centers
40	CIRCE	Technology centers

41	IDAB	Technology centers
42	UPNA	Universities

Table AII.10. The United Kingdom NFCs Stakeholders

1	Department of Energy & Climate Change (DECC)	Government Body
2	Department of transport	Government Body
3	Department for Environment, Food and Rural affairs	Government Body
4	Welsh Government	Government Body
5	Scottish Government	Government Body
6	NNFCC	Research Institutions
7	Carbon Trust	Businesses
8	Ricardo-AEA	Businesses
9	Drax Power	Industry
10	Lowcvp	Technology Platforms
11	Energy Technologies Institute	Technology Platforms
12	Renewable Energy Association (REA)	Industry
13	Innovate UK	Advisory and extension services
14	Univeristy of York	Universities
15	Rothamsted Research	Universities
16	IBERS Aberystwyth University	Universities
17	Cardia Bioplastics /Distributor: Plastribution Limited	Businesses
18	Inspire Biotech	Technology centers
19	Innovation for Agriculture	Advisory and extension services
20	Biopharm	Technology centers
21	NFU National Farmers Union/ Energy Service	Farmers Union
22	Humimeter UK (trading arm Agrishop UK)	Businesses
23	SAC Consulting (Scotland's Rural College)	Universities
24	Agri-Food & Biosciences Institute (AFBI)/Renewable energy group	Research Institutions
25	NIAB	Research Institutions
26	Crops for Energy(C4E)	Businesses
27	BGI Ltd	Businesses
28	Rural Development Initiatives Ltd	
29	Velcourt Ltd	Industry
30	Center for Sustainable Energy	Industry
31	Wood Heat Association (WHA)/Renewable Energy Association	Advisory and extension services

32	SFR (Sustainable fuel register)	
33	Newcastle Univeristy (Cockle Park Farm)	Universities
34	Teagasc (The Agriculture and Food Development Authority) Oak Park Crop Research Centre	Rural Development National Authorities
35	IEC heat solutions	Industry
36	Terravesta	Bio-based Industry
37	SEIL	Bio-based Industry
47	Joint Nature Conservation Committee.	Government Body
52	Biotechnology and Biological Sciences Research Council (BBSRC)	
53	tcbb (Irish Research Centre for Resource Efficiency - Company Limited)	Technology Platforms
54	ADAS	Advisory and extension services
55	Food and Farming Futures (Contributor Agriculture and Horticulture Development Board)	Research Institutions
56	Harper Adams University /Crop and Environment Research Centr	Universities
57	re:heat	Businesses

Table AII.11. European stakeholders of PANACEA project who provided letter of support and others

	Name of the Institution	Institutional Capacity
1	Copa-Cogeca	Farmers Union
2	Cooperativa Agricola Caja Rural Artajona Spain	Farmers Union
3	The French Bioeconomy Cluster (IAR)	Agricultural Cluster
4	Agricultures & Territories – Chambre General D', Agriculture Hauts de France	
5	Novabiom Company	SME
6	Novafarm SA Company	SME
7	Orvalaiz (Sociedad Cooperativa Agraria -Cereal)	
8	Aggelakis Company	SME
9	Camelina Company Espana S. L	
10	Quercus Sp. z. o. o,	SME
11	Agrodomi, Agricultural services Greece	SME
12	Institute of Bioenergy Crops & Sugarbeet Ukraine	Research Institution
13	Polskie Towarzystwo Biomasy - POLBIOM	
14	KANNABIO, Social Cooperative on Organic Hemp Cultivation and Processing	
15	Democritus University of Thrace, School of Ag. And Forestry Sciences	Universities
16	ENAMA, Ente Nazionale per la Meccanizzazione Agricola	
17	ARVIL SCA	Industrial group
18	LUMBIER, SDAD. Cooperativa Cerealista Sierra	
19	Center for Crop Production & Agricultural Supplies LTD	
20	Northern Transylvania Clusters' Consortium	
21	Universitatea de Stiinte Agricole Si Medicina, Veterinara Cluj-Napoca	
22	CNR, Consiglio Nazionale delle Ricerche	
23	ONG Snc	
24	Ifp energies novelles France	
25	WIP_ Energy and Environment Germany	Government
26	Jurante Jansaiskiene	Farmer

27	Mantvydas Drupas	Farmer
28	Gintautas Navickas	Farmer
29	Albinas Navickas	Farmer
30	VALDORBA Sociedad Cooperativa Cerealista	
31	Stasys Stackunas	Farmer
32	Arminas Teiserskis	Farmer
33	Maria Economopoulou	Farmer
34	Agrofit- Theofillopoulou Vasiliki & Co LP	Business
35	Agricultural supplies Georgia Kakaletri	Business
36	Spyropoulos Georgios	Farmer
37	CNA Veneto International Services	
38	Energia Verde, Strejesti	
39	ELIN BIOFUELS S.A. Greece	
40	University of Barcelona Spain	Universities
41	BTG, Biomass Technology Group The Netherlands	Technology Centers
42	RECORD Renewable Energy Consortium for Research and Demonstration	Research Institution
43	HELECTOR SA, Energy and Environment	Government
44	NEA GI, Agricultural supplies	Business
45	Loufopoulos Christos, Agricultural supplies	Business
46	Anastasios MPOURAZANAS LTD	Business
47	Vasileios ARXONTIS LTD	Business
48	Georgios TSINOULIS LTD	Business
49	AGROEFODIA LARISAS LTD	Business
50	New Energy	SME
51	Agrotejo, Union Agricola do Norte de Vaje do	Farmers Union
52	CVF Spain	
53	Latvian State Forest Research Institute	Research Institution
54	Primus LTD	Industry
55	Sustainability consult	Businesses
56	CIBE Uniting Beet Growers	Farmers Union
57	The ETIP Bioenergy (European Technology and Innovation Platform)	Advisory and extension services
58	EuropaBio, the European Association for Bioindustries	Advisory and extension services

59	Research Center Landscape Development and Mining Landscapes (FZLB)	
60	Agency for Renewable Resources (FNR)	Advisory and extension services
61	BTU Cottbus	Universities
62	Nova Institute ofr Ecology and Innovaton	
63	Klasmann-Deilmann GmbH	Industry
64	Hometech Greece	
65	Democritus University of Thrace	Universities
66	DAMT	Government Body
67	H2020 FORBIO project	
68	WWF Hungary	
69	IBAF (Institute of agro-envinronmental and forest biology (IBAF))-CNR	Research Institutions
70	FAO	
71	UNIBO	Universities
72	BCNP Consultants	
73	Biomass Research	Research Institutions
74	Institute of Bioenergy Crops & Sugar Beet (IBC&SB)	Research Institutions
75	eon	Business