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Deliverable: 4.2.1

Social, cultural and legal challenges of agriculture related enterprises of disabled people in the CB area (Greek Part)

PROJECT: Social agri-entrepreneurship for people with disabilities in the crossborder area

AGRI-ABILITY

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Social, cultural and legal challenges of agriculture related enterprises of disabled people in the CB area (Greek Part)

(Προκλήσεις επιχειρήσεων του αγροτικού τομέα για ΑμΕΑ)

In the frame of the project :Social agri-entrepreneurship for people with disabilities in the cross border area





Preface

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Foreword

This document provides all related information and description of the methods, means, tools and practical guidelines regarding the engagement of disabled people in agricultural and rural entrepreneurship. It describes the current situation in agricultural entrepreneurship and maps the relative laws. In addition

Executive Summary

The project aims at the engagement of disabled people in agricultural and rural entrepreneurship. It includes a toolbox that may support a broad range of social enterprises (SE), trainings, ready to use business templates for SE, on-line incubator of SE as one-stop-shop of support, entrepreneurship tools for disabled people, entrepreneurship guidelines, funding opportunities manual, business plans development guide, marketing, promotion and management manual, improvement of practical knowledge and skills, through field labs of capacity building in agriculture/gardening, in agro-tourism and outdoor sporting activities in coastal and inland areas.

1. Background and general description of businesses in the agricultural / agri-food sector

Agribusiness is the business of agricultural production. The term is a combination of agriculture and business and was coined in 1957 by John Davis and Ray Goldberg. It includes agrichemicals, breeding, crop production (farming or contract farming), distribution, farm machinery, processing and seed supply, as well as marketing and retail sales. All agents of the food and fiber value chain and those institutions that influence it are part of the agribusiness system. Within the agriculture industry, "agribusiness" refers to the range of activities and disciplines encompassed by modern food production. There are academic degrees specializing in agribusiness, departments of agribusiness, agribusiness trade associations, and agribusiness publications. In the context of agribusiness management in academia, each individual element of agriculture production and distribution may be described as agribusinesses. However, the term "agribusiness" most often emphasizes the "interdependence" of these various sectors within the production chain. Among critics of large-scale, industrialized, vertically integrated food production, the term agribusiness is used negatively, synonymous with corporate farming. As such, it is often contrasted with smaller family-owned farms.

1.1. Agricultural Entrepreneurship

Agricultural entrepreneurship is a little different from entrepreneurship in non-agricultural firm. Certain elements of entrepreneurship seem to be relatively universal, context independent (e.g., the importance of opportunities, pro-activeness, risk taking, and entrepreneurial self-efficacy), yet other elements are more dependent on the type and context of entrepreneurship (e.g., entrepreneurial learning). For



studying agricultural entrepreneurship, the following characteristics must be taken into consideration:

- **The agricultural sector.**

Historically, the agricultural working setting did not necessarily educate entrepreneurial behavior. Over the last

50 years, in many western countries, agriculture became a highly specialized domain focused on efficiency and productivity. For instance, in Europe, post-war agricultural modernization was very successful for its original aims, to provide food security. However, this system did not stimulate diversification and innovative entrepreneurship. Farmers were trained to be craftsmen, producing food and fibers. The development of an entrepreneurial identity, skills, and behavior are, consequently, not self-evident.

- **The direct farm environment.**

Farms are strongly regionally embedded: A convenient geographical location is therefore an important factor for entrepreneurial opportunities. The opportunities to develop new activities are much bigger when the family farm is located in an attractive region with other businesses, close to urbanized areas (providing a market), with good infrastructure and a well-developed supporting network (Wilson 2008).

- **The family firms.**

Agriculture is dominated by small family farms. The family farming culture and associated logic influences agricultural entrepreneurship. Unlike general entrepreneurs, farming families are less driven by ideas of growth and profit maximization. Higher priority is given to survival, preserving family heritage, autonomy, rural lifestyle, and passing through a healthy farm on to the next generation. Moreover, family farms are passed on through from father to son. This selection process creates communities lacking heterogeneity with a strong tension toward conformity. The presence of other generations in the farm, in combination with a conservative mentality, does not particularly stimulate change and innovative thinking (Jervell 2011).



- **Gender.**

Farm women play an important role in agricultural entrepreneurship. Farm women are, in many cases, the ones who initiate and develop new on-farm business activities. Typically, farm women start by fitting their new activities into the existing farm and combine entrepreneurship with existing farm and family duties. However, farm women change their strategy over time and develop themselves as more expert entrepreneurs: investing in further development, taking risks and identifying, and presenting themselves as entrepreneurs .

The rapid global urbanization and the migration of people from rural areas to the big cities lead to an increasing demand for healthy and sustainable food supplies in the urban zones. The security of food is paramount to social wellbeing and economic performance. The search is on for solutions regarding food safety, animal welfare, habitation and waste-disposal, as well as education, governance and social fairness. Modern farming, including raising crops for food and fuel, and raising animals for food, wool, and more, is a complex industry. As farmers learn to compete and remain viable in a global marketplace, they draw upon business principles and a complex network of agriculture and business professionals. This includes taking advantage of new advances in farming, such as bioengineering, mechanization, and new breeding practices, deciding how to sell crops, whether locally or on a commodities exchange, and managing and insuring land in the most profitable manner. As an agricultural business professional, you might work in any of these areas, either as a farmer or as a business professional supporting farmers.

Thanks to its variety of natural resources and land conditions, Europe is an important region for the global agricultural industry, both in terms of agricultural land and agricultural production. Traditionally, the industry can be divided into three major sectors: farming, fisheries and aquaculture and forestry. The latest technological developments, such as the use of agrochemicals for fertilizers and pesticides, have sharply increased yields from cultivation.

1.2. The entrepreneurial farmer



There is little consensus over definitions of the term entrepreneur. Schumpeter (1934), for example, defines entrepreneurship as ‘carrying out new combinations’ whilst, for Drucker (1970), it is about taking risks. Alternatively,

Audretsch (1995) describes the entrepreneur as the agent of change, whilst Shane and Venkataraman (2000) see entrepreneurship as the ‘processes of discovery, evaluation, and exploitation of opportunities.’

Certainly, research has identified that farmers are an important group with respect to establishing new ventures in rural areas, with farm diversification often considered to be an example of ‘portfolio entrepreneurship’. However, as Alsos, Ljunggren and Pettersen (2003) acknowledge, ‘there is still a paucity of knowledge about which factors trigger the start-up of entrepreneurial activities among farmers’.

More widely considered in the emerging ‘farm entrepreneurship’ literature is the range of skills deemed critical to farm success. Not surprisingly, these reflect more generally proposed entrepreneurship skills. For example, McElwee (2008) suggests that networking, innovation, risk taking, team working, reflection, leadership, and business monitoring are fundamental to developing and improving the farm business. Equally, higher order skills, like creating and evaluating a business strategy, networking and utilising contacts and, recognising and realising opportunities. However, many farmers still prefer not to consider themselves as entrepreneurs, preferring to maintain the cultural identity of farming.

The manager of the agricultural firm today has many roles. It is not enough for him to be a good farmer — a good producer of food products in a traditional way. The manager in modern agriculture must possess many of the qualities of a good entrepreneur. Thus, the contemporary farmer may be considered the manager of a

business, an entrepreneurial individual, or even both. There is a range of skills and competencies that is considered important for successful diversification into agritourism enterprise. Tourism is also an important factor in both the sustainability of individual farm businesses and the economic viability of rural areas.

2. AGRICULTURE IN GREECE

Supported by exceptional climatic conditions, agriculture is a key sector for the Greek economy, comprising 2.9 per cent of GDP and 14 per cent of employment (compared with an EU average of 1.2 per cent and 5 per cent, respectively). However, the lack of a clear agricultural strategy and the incapability to exploit the dynamics of the rapidly expanding international market has led the sector to rely heavily on European subsidies, which to a large extent determined the level (and in some cases the type) of production. The food supply chain has a relatively small manufacturing component (adding just 40 per cent to the agricultural production versus 70 per cent in Western Europe), as most Greek agro-food products are consumed or exported in bulk form. On the other hand, a quarter of Greek food exports have exploited Greece's comparative advantages and gained significant shares in the international market (e.g. olives, yogurt and honey). Their common strategy is to target high-income countries (such as the euro area, UK, US, Japan), with branded products in packaged forms.

New forces acting on the sector are leading to change, including:

(i) the recent reform in the Common Agricultural Policy (CAP) that implements stricter rules in terms of production quality and use of funds; (ii) the critical importance of exports to revive the Greek economy; and (iii) the increased competition in world markets.

The production of higher value-added food products as well as their efficient promotion is the only way forward for the Greek agro-food industry. Successful implementation of the above would create an efficient food value chain, covering all stages of production (from agricultural research, to the production and packaging of differentiated products as well as strategic marketing/branding). Such a strategy would generate food products that are national champions, able to access niche

markets in high income countries. Unexploited dynamics of the Greek agro-food sector :

(i) the potential for higher agricultural production (following examples of countries like New Zealand, The Netherlands, Israel); as well as

(ii) the development of a larger food manufacturing sector (i.e. transform bulk production to high-value-added products).

(iii) Agricultural production should become more technologically sophisticated.



Typical Greek farm landscape

The reformed CAP offers opportunities for a more professional approach to agricultural activity, with less dependence on income subsidies and more focus on upgrading the production process. The limitation of small-sized farms could be overcome by a business-oriented operation of agricultural cooperatives, with managing boards including producers, marketers and researchers. The vertical integration in the food supply chain should also aim towards the development of strong brands. In this context, the promotion of PDO products should be encouraged and synergies from sectors such as tourism for the successful branding of Greek agro-food products should be developed. (Paul Mylonas, NBG 2015)

Policy should focus on the actions that will combine Greece’s comparative advantages with best practices applied in other countries. In that light, especially as agricultural production is highly segmented in Greece, the establishment of a well-functioning food value chain is a necessity, i.e. a strategic alliance between farmers and other supply-chain partners to produce and distribute significant volumes of high-quality, differentiated food products.

It is fortunate that the current juncture – with the new CAP focusing on supporting innovative efforts, rather than offering direct subsidies, as well as the new Horizon2020 initiative under the National Strategic Reference Framework (NSRF) – is

very supportive of such a change in strategy. Indeed, the building blocks of the new growth model of the Greek agro-food sector should comprise:

The moderation of negative effects from the small size of agricultural properties through the implementation of initiatives to unite individual farmers in a common purpose within some form of organization. Such an entity would allow a much needed increase in bargaining power, considering the fact that both suppliers of seeds and food distributors are highly concentrated and large players control the international food market.

One way to accomplish this would be through a more business-oriented operation of agricultural cooperatives that would promote agricultural products under a single label. To this end, managing boards including producers, marketers and researchers should be formed. Another way to enhance efficiency would be through the creation of supply chain agreements between manufacturers and farmers. In fact, the examination of successful cases of branded products with high export market shares reveal that agricultural product promotion is more effective through vertical integration. This usually involves a manufacturing company or distributor organizing smaller producers, taking measures to guarantee stability in quality and quantity and promoting agricultural production under a common brand. Indicatively, about 14 per cent of Greek farmers have benefited from contract farming, while another 25 per cent are willing to try it in the future, based on a survey of the Aristotle University of Thessaloniki. Successful examples in Greece and in several EU countries include: i) brewing companies with barley growers; ii) milk companies with livestock breeders; and iii) wine companies with grape growers.

The technological upgrade of the production process could be promoted through the cooperation of public institutions, research centers, universities and private companies. It should be noted that investment in technology does not necessarily mean new inventions or discoveries. It could also involve adaptation of available technology to the needs of specific products or regions (e.g. tailor-made seeds) – especially in light of climatic change challenges. Moreover, taking into account the biodiversity of its natural environment, Greece could invest in the research of the medicinal properties of unique domestic plants and promote them to

the high-growth natural pharmaceutical and healthcare global industry. Complimentary to this effort would be concerted actions to undertake workforce development (training programs) as well as introduction of incentives (through targeted use of EU funds) in order to attract more young farmers to the agricultural sector, which would better fit to promote modernized production and targeted business strategies. Young farmers (under 40 years old) cover about 24 per cent of Greek agricultural employment, compared with 31 per cent in Europe.

Increasing production efficiency and producing a technically superior product is not sufficient for agribusinesses to develop competitive advantage, they also need to adopt strategic planning models. In particular, they need to develop strong brands, close relationships throughout the supply chain and market orientation. The creation and promotion of a national brand (or regional brands) with specific characteristics as well as product certification (PDO, PGI and certified seeds) could be helpful to that direction.

Apart from policy measures, it is also important to build infrastructure in order to promote efficiently our fresh products (38 per cent of Greece's agricultural production are fruit and vegetables compared with 19 per cent on average in EU). The key supporting activities for the fresh products to reach their destination in good condition are: 1. a packaging industry to supply the appropriate containers and cold storage units on a regular and reliable basis, and 2. logistics and transportation services to ensure timely delivery.

3. Agri-food business in Greece

3.1. Food & agriculture subsectors

During the last decades, there is a turn towards high-quality farm production and export, and farmers shift to more sophisticated, export-focused, higher-value crops. This is driven both by the Greek Government, which views food exports as a significant opportunity, and also by local farmers co-operatives which are improving their know-how and entrepreneurial skills and helping farmers modernize their means of

production. Greek agriculture and food products have traditionally been one of the major export sectors for Greece.

There are several specific sectors that show potential for increased returns in terms of production capacity. Most notably, there are several types of crops which are considered “export engines” (e.g. grapes, oranges, peaches, nectarines, kiwis) and which can all meet European and global demand with the appropriate standardisation and quality control. Greek companies are making food and agriculture one of the most dynamic and high-growth sectors in Greek manufacturing and exports, with quality products like olive oil, flour and its products, honey, cheese and processed meats. It is also an area where Greek companies have managed to innovate and differentiate themselves, both in terms of the product but also in terms of packaging. Over the past 10 years, there are several examples of companies and cooperatives in the food sector who have achieved significant market shares abroad, combining traditional Greek ingredients and innovative marketing and packaging.

A successful example of a Greek cooperative is “Chios Masticha Growers Association”. Apart from the collection of the local production, this cooperative has taken considerable actions to promote the product (through its subsidiary shop chains, Masticha Shops), to enhance its promotion strategy by collaborating with universities and research centers, and to recognize its medicinal properties (and consequently sign a contract with an international pharmaceutical company, GNC).

Over the next years, the food & agriculture sector in Greece is expected to be a significant contributor to GDP growth and value added, driven by several key market trends and competitive advantages:

- The recent shift towards organic, natural ingredients in the Greek agriculture sector which are highly regarded and can command a greater premium and value added
- The prevalence of the Mediterranean Diet, as a premier paradigm of healthy, natural eating across the world
- The key drivers of health, ethics, physical fitness and pleasure that affect consumer preferences in developed economies
- The increased drive for self-sufficiency and food safety

- The potential for clusters of innovation and R&D in several specialized Greek food supply chains, combining EU funding, the work of research and academic institutes and the interest of industrial champions in the application of new technologies

Given the above environment, Greek food manufacturers can take advantage of their smaller scale, access to high-quality inputs and traditional Mediterranean positioning to differentiate from the global food manufacturers and gain market share value-added product segments and higher price points.

Greece's food and beverage companies have created a large sales and distribution network in Southeast Europe. Topping the list of products exported are vegetables, fruits, olive oil, dairy products, fresh seafood, canned fruits, olives, raisins, wine, and tomato products. More recently, Greek food and beverage companies are rapidly penetrating higher-growth markets such as the US, China, Russia and Western Europe. There is abundant opportunity to add value in many product categories, especially as the global interest in healthy foods, snack foods, and convenience foods continues to expand. Honey and nut-based snacks, pasta products, marmalades and pickled goods, as well as novel seafood and meat products demonstrate a significant potential in numerous markets. And as consumption of olive oil grows, Greece is ideally positioned to respond in this sector as it is the third largest producer of olive oil in the world.

3.2. Agricultural production / organic foods

3.2.1. Greek specialty foods

Greek specialty foods include a variety of products, ranging from high-value niche products (Chios Masticha, Kalamata olives, Kozani Saffron, Aegina pistachios) to widely available categories which are endemic to the Greek diet (e.g. greek yoghurt, olive oil, wine, honey) to Protected Designation of Origin Status (**PDO**), Protected Geographical Indication (**PGI**) and Traditional Specialities Guaranteed (**TSG**) products only found in Greece. These products form the spearhead of an upgrading of the Greek

food production, having significant export potential and high value added in the international markets. Many growth opportunities exist in several key areas, like

- Development of innovative products around high-value crops
- Marketing and sales capabilities in order to penetrate developed markets and ensure market access
- The combination of local production and know-how with investments
-

3.2.2. Aquaculture

Although aquaculture is a relatively specialized sub-segment of food production, it is a rapidly growing sector of the Greek economy – and one where Greece can leverage its competitive advantages and already is a major international exporter. Approximately 90% of the sector’s value is driven by two main fish products, seabass/seabream, in which Greece holds a dominant position in the global markets.

3.2.3. Olive Oil

Greek olive oil is recognized as very high-quality, driven by the natural environment



and production values of Greek oil producers. There are hundreds of local varieties, including a number of organic producers which are positioning in the global high-value market with specialty and luxury oils.

Olives cultivation

3.3. Greece’s advantages

Brand value - Greek diet is regarded as a pre-eminent example of Mediterranean diet, which has been globally accepted as one of the healthiest and most

nutritional Geography and climate conditions – Greek geography and climate can sustain some of the most diverse, high-quality natural raw materials and produce, including such exotic ingredients as saffron and truffles. Traditional high-quality ingredients – Greece has a number of recognizable PDO or other local ingredients and foods whose quality is recognized by some of the greatest Chefs in the world. Specialized know-how and expertise – agriculture and food production is a traditional Greek occupation, which has led to a significant amount of food research departments, agricultural schools, trained food technologists and chemists, and skilled farmers.

Research and Innovation - Greece's universities and research institutes focus heavily on providing assistance to the food and beverage industry. A number of highly specialized research centers such as the University of Thessaly, the Food Industrial Research & Technological Development Company (ETAT), the Institute of Agrobiotechnology and the Institute of Aquaculture, assist manufacturers and processors in developing innovative solutions to meet the needs of today's marketplace.

3.4. Entrepreneurship opportunities

- Repositioning and consolidation of primary food production using new technologies (hydroponics, greenhouses etc.) and high-value crops
- Participation in the growth and consolidation of smaller, organic producers with strong export potential
- Investment in the packaging, export and marketing of traditional staples of Greek diet such as olive oil, herbs and aquaculture
- Investment in boutique and niche market goods, leveraging the abundant high-quality raw materials, the EU-level production standards and the competitive operating costs
- Development of high-value product lines based on the global “Mediterranean Diet” trends and the exploding organic food sector

- New product development, production and distribution based on the know-how of Greek research centers and the familiarity of Greek consumers with international food products, brands and tastes .

4. DEFINING DISABILITY

There is no single definition of disability. It can be defined as an outcome of complex interactions between the functional limitations of an individual and the social and physical environment. Functional limitations can arise from a person's physical, intellectual or mental conditions (British Government department for international development 2000)..



Different forms of disability

Definitions of disability are shaped by two contrasting concepts: the medical model of disability and the social model of disability. In short, the medical model treats disability as a characteristic of the person and restrictions in activity are explained in terms of individuals'

bodily capabilities, with impairments treated implicitly as a form of negative human capital. In contrast, the social model of disability, pioneered by Oliver (1990) assumes that people with impairments are disabled by societal attitudes, institutions and environmental barriers rather than individual characteristics. This model distinguishes 'impairment' (i.e. a limitation of the mind and body) from 'disability' (i.e. social exclusion) (Shakespeare, 2006).

The World Health Organisation (WHO) International Classification of Functioning, Disability and Health defines 'disabilities' as an umbrella term referring to impairments, activity limitations, and participation restrictions:

- An **impairment** is a problem in body function or structure, including physical impairments (e.g. dysfunction of the musculoskeletal, neurological, cardiac, circulatory and respiratory body systems); mental illness or disorder (e.g.

schizophrenia, neuroses and psychotic conditions, anxiety and emotional disorders, phobias, depression); cognitive impairments (e.g. brain injuries, dementia); sensory impairments (e.g. sight loss or blindness); and intellectual or developmental impairments (e.g. below average general intellectual function).

- An **activity limitation** is a difficulty encountered by an individual in executing a task or action.
- A **participation restriction** is a problem experienced by an individual in involvement in life situations.

Impairments, limitations and restrictions vary in terms of numerous characteristics, i.e. type, severity, stability, duration and time of onset. They may be stable, constituting a permanent condition, be slowly degenerative or impose episodic, fluctuating or recurring restrictions on activities (Boyd, 2012).

Longitudinal survey panel data from the United Kingdom suggests that the status of being 'disabled' is, for most, a temporary one. The long-term disabled constitute a relatively small proportion of working age people who experience disability. Individuals may suffer from multiple conditions or impairments. The onset of impairments also varies between individuals. Some are born with an impairment while others acquire them during childhood or adult life as a consequence of accident, ill health or ageing. Impairment might occur suddenly or entail a gradual deterioration in health over time. Evidence from the UK indicates that only 11% of the disabled adult population is born with their disability, 12% acquire it in childhood, and 75% become disabled during their working life (Burchardt 2000, 2003). This highlights that no two experiences of disability are the same; nor are disabled people equally disadvantaged in the labour market. Disability is therefore a complex phenomenon involving interaction between a person's body and the society in which they live.

Diversity in impairment and disability should discourage the use of a simple binary division between 'the disabled' and 'the non-disabled' for two reasons. First, the two populations are fluid rather than fixed. A significant proportion of people are affected by disability at some point during their working lives. Second, disabled people are a highly differentiated group, varying not only in terms of impairment characteristics but also in terms of other personal and household characteristics (i.e.

gender, ethnicity, age, education, family structure) and socioeconomic circumstances that influence labour market participation rates (e.g. educational attainment).

4.1. Self-employment activities of people with disabilities

Data on labour market activities of people with disabilities are limited. Available data are quite dated and comparability across Member States can be problematic due to the different definitions of disability used in different labour force surveys. Nonetheless, the available data suggest that people with disabilities are more likely to be unemployed or inactive (Pagán, 2009; Greve, 2009; Applica/CESEP/European Centre, 2007). Those who are working are often employed in low-skilled, low-paying occupations (Meager and Higgins, 2011). Data from the European Union Statistics on Income and Living Conditions (EU-SILC) suggest that across the EU, people with disabilities are as likely as those without disabilities to be self-employed. However, people with disabilities are more likely to be inactive in the labour market. Between 22% (Austria) and 78% (Poland) of the population with identified disabilities are not active in the labour market (Applica/CESEP/European Centre, 2007).

This variation can be explained by several factors, including the generosity of disability benefits and the ease of accessing them, the extent to which people with disabilities are included or excluded from society and education, employer discrimination, demographic factors and the incidence of severe disabilities. There is large variation in self-employment rates of people with disabilities across Member States. The self-employment rates of people with disabilities are relatively low in many north-eastern EU countries and higher in southern EU countries.

There are also differences in self-employment activities based on the type and severity of impairment or disability. For example, self-employment rates were higher among people who were severely limited in their daily activities than among those reporting some or no limitation in daily activities. There is some evidence from the UK to suggest that men and women with musculoskeletal problems, and women with mental health problems, are particularly likely to be self-employed, while men with sensory impairments are relatively unlikely to be self-employed. Data from the UK also suggest

that disabled entrepreneurs are more likely to work alone, rather than employ others. Nearly 80% of the self-employed with disabilities have no employees compared to 74% of those without disabilities and non-work-limited disabled men . Moreover, people with disabilities are more likely to operate as a home-based business (East Midlands Development Agency – EMDA, 2009).

4.2. The benefits of entrepreneurship for people with disabilities

People can be attracted to self-employment for any number of reasons. While some enter self-employment out of necessity, many seek to take advantage of an opportunity, gain independence and autonomy, improve their work–life balance, increase their satisfaction for work activities and attempt to increase their income and other material benefits. While these reasons may also be a significant influence for entrepreneurs with disabilities, they are also likely motivated by different factors. One of the greatest benefits is that self-employment provides an entry into the labour market as employer discrimination is frequently reported (Boylan and Burchardt, 2002; Hagner and Davis, 2002; EMDA, 2009). Employer discrimination is often highest for those impairments or limitations that are subject to greater prejudice by employers such as those with mental and physical disabilities (Pagán, 2009). For these people, self-employment might offer the only opportunity for active labour market participation and with it, improved income and living standard. Another important advantage of self-employment for those with disabilities is that it provides a better adjustment between disability status and working life through more flexibility in work pacing, hours worked and location of work (Meager and Higgins, 2011). Thus, self-employment can provide a sense of self-empowerment because entrepreneurship can provide a person with the opportunity to take control of their disability and labour



market participation, and be socially and economically active to the extent possible for their situation.

5. Institutional framework and challenges for the disabled

5.1. Legal Framework In The Eu



The EU and its Member States have been given a strong mandate to address and improve the social and economic situation he EU and its Member States of people with disabilities by several charters, treaties and conventions, including:

- The **Charter of Fundamental Rights of the European Union** which states the need to respect and protect human dignity, ensure the integration of people with disabilities in the community (Article 26) and prohibit discrimination on the basis of disability (Article 21);
- **The Treaty on the Functioning of the European Union**, which requires the Union to fight discrimination based on disability when drafting and implementing policies and adopting legislation (Articles 10 and 19); and
- **The United Nations Convention on the Rights of Persons with Disabilities** which is a legally binding instrument that protects and safeguards human rights and fundamental freedoms of persons with disabilities.

Following this mandate, the EU developed this strategy to empower people with disabilities to enjoy full rights and benefits from participating in society. The strategy focuses on eliminating barriers for people with disabilities in eight action areas: Accessibility, Participation, Equality, Employment, Education and training, Social protection, Health, and External action (i.e. actions outside of the EU).



To reduce barriers in these areas, a four-pronged strategy has been developed to raise awareness: provide financial resources to support and research programmes, improve data collection and monitoring and implement the UN-required governance mechanisms across the Commission and with Member States.

Entrepreneurship is indirectly supported by this strategy through the reduction of barriers under the 'Participation' and 'Employment' themes.

- Article 1 of the Charter of Fundamental Rights of the EU (the Charter) states that 'Human dignity is inviolable. It must be respected and protected.' Article 26 states that 'the EU recognises and respects the right of persons with disabilities to benefit from measures designed to ensure their independence, social and occupational integration and participation in the life of the community.' In addition, Article 21 prohibits any discrimination on the basis of disability.

- The Treaty on the Functioning of the EU (TFEU) requires the Union to combat discrimination based on disability when defining and implementing its policies and activities (Article 10) and gives it the power to adopt legislation to address such discrimination (Article 19).

- The United Nations Convention on the Rights of Persons with Disabilities (the UN Convention), the first legally-binding international human rights instrument to which the EU and its Member States are parties, will soon apply throughout the EU. The UN Convention requires States Parties to protect and safeguard all human rights and fundamental freedoms of persons with disabilities.

According to the UN Convention, people with disabilities include those who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others.

5.2. Greek legislation on persons with disabilities

The above mentioned charters, treaties and conventions, are ratified and incorporated in Greek legislation.

Law 4488/2017, in particular, Part D of the Law, establishes a general framework for the application of the provisions of the United Nations Convention on the Rights of Persons with Disabilities and the Optional Protocol for the rights of Persons with Disabilities (first article of Law 4074/2012), in order to remove the obstacles that hinder the full and equal participation of Persons with Disabilities in the social, economic and political life of the country.

Constitutional Framework for the Legal Protection of the Disabled .

The Greek Constitution stipulates in Article 4 that all Greeks are equal before the law and that Greek men and women have equal rights and obligations. This article establishes the principle of equality between the two sexes, as well as the principle of gender equality. This constitutional guarantee of the principle of equality before the law is the cornerstone of the regulatory framework for disabled people and their treatment by the state, while the principle of gender equality ensure that women with disabilities are equal members of society and are protected from the state just like men.

According to Article 21 par. 2 of the Constitution, large families, war and peace invalids, war victims, widows and orphans of those who fell in the war, as well as those suffering from incurable physical or mental illness have the right to special care by the State, while, in accordance with paragraph 3, the State takes care of the health of its citizens and takes special measures to protect youth, old age, disability and the poor. This article establishes the welfare state of justice and the welfare policy state, which is exercised through specific laws that comply with this constitutional requirement.

Article 21 par. 6 explicitly refers to the rights of persons with disabilities, stating the following: "People with disabilities have the right to enjoy all measures that ensure their autonomy, professional integration and participation in the social, economic and political life of the country." With this provision, the Greek Constitution is harmonized with the most progressive Constitutions of other countries and the welfare model for disability is adopted. Specifically, this provision combined with Articles 4 and 116 par. 2, allows the legislature to take all measures necessary to protect or facilitate people with disabilities, among other groups of people who face inequality. Article 22 also establishes the right of disabled people to work. In general, the provision of

employment, employment conditions, education, promotions, on-the-job training and the entire status of employment of the disabled are regulated, in the sense that discrimination in the above matters due to disability is prohibited. Article 25 protects human rights and decrees that all rights of a person as an individual and as a member of society are respected by the state. The disabled, as beneficiaries of the above rights, are under the protection and guarantee of the state and enjoy all aspects of political, social, economic and cultural life. Of course, the abuse of a right is prohibited, ie the exercise of the right is not allowed to exceed the limits of the economic and social purpose of the right and the limits set by the right itself.

Apart from the Constitution, many laws are established to protect and care for people with disabilities. Some examples are:

Civil Law, as regulated by the Civil Code (PD 456/1984), provides for the legal capacity, tort, judicial assistance, Inheritance Law, Family Law etc. and also has many regulations and restrictions on legal acts of persons with disabilities.

Criminal Law, regulated by the Penal Code (PD 283/1985), provides for regulations concerning the disabled in the provisions for reduced imputation. The law does not positively define what is "capacity to be attributed", but lists those cases which, when present, imply the non-existence of that capacity.

In the new Civil Service Code, (law 3528/2007), there are provisions and regulations, concerning people with disabilities.

There are also provisions for the disabled persons in many Greek laws, concerning their education, work, social security, ability to move in public transportation, access in buildings, tax releases and exclusions, financial aids and benefits etc.

6. European Disability Strategy 2010-2020

To overcome discrimination and increase the inclusion of vulnerable and marginalised groups the European Union followed a three-fold approach embedded within the European Disability Strategy 2010-2020 (European commission 2010):

- Enhancement of access to mainstream services and opportunities,
- enforcement of legislation to overcome discrimination and

-development of targeted approaches to respond to the specific needs in each group. Within the Seventh Framework Programme (FP7) the European Union initiated different projects such as Digital Agenda for Europe to reach their goals. The project aimed to ensure the full accessibility of public sector websites by 2015 (European commission 2013). Horizon 2020 combines all research provided by the Framework Programmes, the innovation related activities of the Competitiveness and Innovation Framework Programme (CIP) and the European Institute of Innovation and Technology.

6.1. EUROPE 2020 STRATEGY for people with disabilities

Full economic and social participation of people with disabilities is essential if the EU's Europe 2020 strategy in order to succeed in creating smart, sustainable and inclusive growth. Building a society that includes everyone also brings market opportunities and fosters innovation. There is a strong business case for making services and products accessible to all, given the demand from a growing number of ageing consumers. For example, the EU market for assistive devices (with an estimated annual value of over € 30 billion is still fragmented, and the devices are expensive. Policy and regulatory frameworks do not reflect the needs of people with disabilities adequately, neither do product and service development. Many goods and services, as well as much of the built environment, are still not accessible enough.

6.1.1. Objectives and actions

The economic downturn has had an adverse impact on the situation of people with disabilities, making it all the more urgent to act. This Strategy aims to improve the lives of individuals, as well as bringing wider benefits for society and the economy without undue burden on industry and administrations. The overall aim of this Strategy is to empower people with disabilities so that they can enjoy their full rights, and benefit fully from participating in society and in the European economy. Achieving this and ensuring effective implementation of the UN Convention across the EU calls for consistency. This Strategy identifies actions at EU level to supplement national ones, and it determines the mechanisms needed to implement the UN Convention at

EU level, including inside the EU institutions. It also identifies the support needed for funding, research, awareness-raising, statistics and data collection.

6.1.2. Eliminating barriers.

The Commission has identified eight main areas for action: Accessibility, Participation, Equality, Employment, Education and training, Social protection, Health, and External Action. For each area, key actions are identified. These areas were selected on the basis of their potential to contribute to the overall objectives of the Strategy and of the UN Convention, the related policy documents from EU institutions and the Council of Europe, as well as the results of the EU Disability Action Plan 2003-2010, and a consultation of the Member States, stakeholders and the general public. The references to national actions are intended to supplement action at EU level, rather than to cover all national obligations under the UN Convention. The Commission will also tackle the situation of people with disabilities through the Europe 2020 strategy, its flagship initiatives and the relaunch of the single market.

6.1.3. Areas for action

6.1.3.1. Accessibility

'Accessibility' is defined as meaning that people with disabilities have access, on an equal basis with others, to the physical environment, transportation, information and communications technologies and systems (ICT), and other facilities and services. There are still major barriers in all of these areas. For example, on average in the EU-27, only 5% of public websites comply fully with web accessibility standards, though more are partially accessible. Many television broadcasters still provide few subtitled and audio-described programmes .

Accessibility is a precondition for participation in society and in the economy, but the EU still has a long way to go in achieving this. The Commission proposes to use legislative and other instruments, such as standardisation, to optimise the accessibility of the built environment, transport and ICT in line with the Digital Agenda and Innovation Union flagships. It will encourage the incorporation of accessibility and 'design for all' in educational curricula and training for relevant professions. It will also

foster an EU-wide market for assistive technology. EU action will support and supplement national activities for implementing accessibility and removing existing barriers, and improving the availability and choice of assistive technologies.

6.1.3.2. Participation

There are still many obstacles preventing people with disabilities from fully exercising their fundamental rights - including their Union citizenship rights - and limiting their participation in society on an equal basis with others. Those rights include the right to free movement, to choose where and how to live, and to have full access to cultural, recreational, and sports activities. For example, a person with a recognised disability moving to another EU country can lose access to national benefits, such as free or reduced-cost public transport.

The Commission will work to achieve full participation of people with disabilities in society by:

- enabling them to enjoy all the benefits of EU citizenship;
- removing administrative and attitudinal barriers to full and equal participation;
- providing quality community-based services, including access to personal assistance.
- overcome the obstacles to exercising their rights as individuals, consumers, students, economic and political actors; tackle the problems related to intra-EU mobility and facilitate and promote the use of the European model of disability parking card;
- promote the transition from institutional to community-based care
- improve the accessibility of sports, leisure, cultural and recreational organisations, activities, events, venues, goods and services including audiovisual ones; promote participation in sports events and the organisation of disability-specific ones; explore ways of facilitating the use of sign language and Braille in dealing with the EU institutions; address accessibility to voting in order to facilitate the exercise of EU citizens' electoral rights; foster the cross-border transfer of copyright works in accessible format .

EU action will support national activities to:

- achieve the transition from institutional to community-based care, including use of Structural Funds and the Rural Development Fund for training human resources and

adapting social infrastructure, developing personal assistance funding schemes, promoting sound working conditions for professional carers and support for families and informal carers;

– make sports, leisure, cultural and recreational organisations and activities accessible.

6.1.3.3. **Equality**

Over half of all Europeans consider discrimination on grounds of disability or age to be widespread in the EU. As required by Articles 1, 21 and 26 of the EU Charter and by Articles 10 and 19 TFEU, the Commission promotes the equal treatment of people with disabilities through a two-pronged approach. This involves using existing EU legislation to provide protection from discrimination, and implementing an active policy to combat discrimination and promote equal opportunities in EU policies.

EU action supports and supplements national policies and programmes to promote equality, for instance by promoting the conformity of Member State legislation on legal capacity with the UN Convention.

6.1.3.4. **Employment**

Quality jobs ensure economic independence, foster personal achievement, and offer the best protection against poverty. However, the rate of employment for people with disabilities is only around 50%. To achieve the EU's growth targets, more people with disabilities need to be in paid employment on the open labour market. The Commission should exploit the full potential of the Europe 2020 Strategy and its Agenda for new skills and jobs by providing Member States with analysis, political guidance, information exchange and other support. Particular attention should be paid to young people with disabilities in their transition from education to employment and to the issue of self-employment and quality jobs. Support should be given to voluntary initiatives that promote diversity management at the workplace, such as diversity charters signed by employers and a Social Business Initiative.

6.1.3.5. **Education and training**

In the 16-19 age group the rate of non-participation in education is 37 % for considerably restricted people, and 25 % for those restricted to some extent, against 17 % for those not restricted. Access to mainstream education for children with severe disabilities is difficult and sometimes segregated. People with disabilities, in particular children, need to be integrated appropriately into the general education system and provided with individual support in the best interest of the child. With full respect for the responsibility of the Member States for the content of teaching and the organisation of education systems, the Commission will support the goal of inclusive, quality education and training under the Youth on the Move initiative. It will increase knowledge on levels of education and opportunities for people with disabilities, and increase their mobility by facilitating participation in the Lifelong Learning Programme.

EU action will support national efforts through ET 2020, the strategic framework for European cooperation in education and training, to remove legal and organisational barriers for people with disabilities to general education and lifelong learning systems; provide timely support for inclusive education and personalised learning, and early identification of special needs; provide adequate training and support for professionals working at all levels of education and report on participation rates and outcomes.

6.1.3.6. **Social protection**

Lower participation in general education and in the labour market lead to income inequalities and poverty for people with disabilities, as well as to social exclusion and isolation. They need to be able to benefit from social protection systems and poverty reduction programmes, disability-related assistance, public housing programmes and other enabling services, and retirement and benefit programmes. Through the European Platform against Poverty, these issues should be addressed. The EU will support national measures to ensure the quality and sustainability of social protection systems for people with disabilities, notably through policy exchange and mutual learning.

6.1.3.7. **Health**

People with disabilities may have limited access to health services, including routine medical treatments, leading to health inequalities unrelated to their disabilities. They are entitled to equal access to healthcare, including preventive healthcare, and specific affordable quality health and rehabilitation services which take their needs into account, including gender-based needs. This is mainly the task of the Member States, which are responsible for organising and delivering health services and medical care. The Commission will support policy developments for equal access to healthcare, including quality health and rehabilitation services designed for people with disabilities.

6.1.3.8. **External Action**

Actions concerning changes in the legislation of countries that are going to be members of the European Union in the future

6.1.4. **Implementation of the Strategy**

This Strategy requires a joint and renewed commitment of the EU institutions and all Member States. The actions in the main areas above need to be underpinned by the following general instruments:

- a) Awareness-raising of disability issues in the society
- b) Financial support through EU programmes that offer funding possibilities to people with disabilities.
- c) Statistics and data collection and monitoring of information on disability collected through EU social surveys. EU action will support and supplement Member States' efforts to collect statistics and data that reflect the barriers preventing people with disabilities from exercising their rights.
- d) Mechanisms required by the UN Convention. The framework required under Article 33 of the UN Convention needs to be addressed on two levels: vis-à-vis the Member States in a wide range of EU policies, and within EU institutions.

The Strategy is intended to harness the combined potential of the EU Charter of Fundamental Rights, the Treaty on the Functioning of the European Union, and the

UN Convention, and to make full use of Europe 2020 and its instruments. It sets in motion a process to empower people with disabilities, so that they can participate fully in society on an equal basis with others. As Europe's population ages, these actions will have a tangible impact on the quality of life of an increasingly large proportion of its people. The EU institutions and the Member States are called upon to work together to build a barrier-free Europe for all.

7. The new GREEN DEAL in the agricultural sector

Agripreneurship will be affected by the new green deal and entails significant change in the way the business operate. The Commission published its Communication on the European Green Deal in mid-December 2019, and it defines the key political objectives of the new Commission for the next five years.

The headline commitment is to make Europe the first climate-neutral continent by 2050. But the Green Deal goes well beyond just climate policy and is intended to address environmental sustainability issues more broadly, including the protection of natural resources and the minimisation of resource use.

The European Green Deal is advertised as **Europe's new growth strategy**. It aims to transform EU into a resource-efficient and competitive economy where there are no net emissions of greenhouse gases in 2050 and where economic growth is decoupled from resource use.

The Commission recognises that new technologies and disruptive innovation are critical to achieve the objectives of the European Green Deal. Horizon Europe is expected to play a pivotal role in leveraging additional public and private investment in research. At least 35% of its budget will fund new solutions for climate which are relevant for implementing the Green Deal.

7.1. Farm to Fork Strategy



Farming and food systems will have a major part to play in delivering the European Green Deal. A new Farm to Fork Strategy will prepare a roadmap towards a fair, healthy and environmentally-friendly food system.

Today's Europe is facing some uncomfortable truths. The population is growing, yet natural resources are shrinking and biodiversity is disappearing. Millions of citizens live in food poverty, yet a fifth of the food produced is wasted, and half the adult population is overweight. Major change has to be implemented in order to achieve the Sustainable Development Goals. It is clear: a new, healthier, fairer and more sustainable approach to food systems is needed. Business as usual is no longer an option when it comes to food production. This goes for producers as well as for consumers. **The Farm to Fork strategy for Sustainable food** is a key component of the European Green Deal. European food is famous for being safe, nutritious and of high quality. It should now also become the global standard for sustainability. The farm unions do not yet appear to have grasped the extent to which the fundamentals of the farm policy debate have shifted in the past two years. Individual farmers must work within a market and policy system that has failed to properly reflect sustainability issues and can hardly be blamed for doing the best they can within that system. The Commission's Farm to Fork Strategy has recognised that this system is no longer fit for purpose. Fortunately, there are also those within the farming sector, both individual farmers but also sectors such as the dairy industry, that also share this view.

The Farm to Fork strategy will have **six principal objectives** which feed into and are in turn influenced by other strategic objectives of the European Green Deal:

- a) To contribute to Europe's climate change agenda
- b) To protect the environment (linking to the Zero Pollution Strategy and the Circular Economy Strategy)



- c) To preserve biodiversity (contributing to the updated Biodiversity Strategy for 2030)
- d) To encourage sustainable food consumption
- e) To promote affordable and healthy food for all
- f) To improve farmers' position in the value chain.

Farmers should reduce the use of chemical pesticides, fertiliser and antimicrobials as well as to reduce the exposure of citizens to endocrine disruptors as part of delivering on the zero-pollution ambition. Circular economy should be promoted, by reducing the environmental impact of the food processing and retail . Finally, sustainable food consumption and affordable healthy food for all should be promoted by improving consumer information, notably by looking at ways to address demands for more visible and complete information on the health and sustainability of food products.

8. Social and cultural dimension of challenges

8.1. Entrepreneurship for people with disabilities



The World Health Organization nomenclature (Wood 1980; but cf. IOM 1991) defines *impairment* as the loss of physical function, and *disability* as a limited ability to perform activities. *Handicap* refers to problems caused by the disability in a given society. Thus, an accident may limit a person's ability to use their legs (the impairment) to climb stairs (the disability). The social fall-out is that employers refuse to hire the person (the handicap).

The implications of disabilities at the cultural level of personhood are crucial to the tenor of the personal experience and social patterns of treatment of individuals with impairments. These implications are important in two ways. Individual efforts to cope with disability focus on preserving one's identity as a complete person as well as managing functional limitations and social activities. The ability to successfully manage threats to adult identity contributes to an individual's willingness and

motivation to marshal personal and social resources to overcome impairments and regain functioning in daily activities.

Multiple meanings are attributed when an individual's physical movement appears to be limited. In America, activity is an ethic and a sign of health and well-being; inactivity is interpreted as a sign of passivity, distress, or depression (by those with and without disabilities alike). Consequently, for someone with functional impairments, movement may be an unreliable indicator of passivity or symptom of distress.

Cultural beliefs and values instill powerful motivations and experiences that shape how individuals make sense of and deal with disabilities. From a cultural view, the loss of independent motor control degrades one's position as a full adult person. Indeed, there is a dehumanization, an unraveling of the lifelong competences that in earliest childhood marked the emergence of a full person: the acquisition of language and independent willful movement of the body by walking. That is, the association of old age and senility with disability taints the public image of adults with disabilities at all ages. Trenchant popular stereotypes of old age as haunted by the specter of illness and death, set the stage for disabilities at mid and late life to pose acute challenges to self-esteem and to the individual's credibility as a complete person who exercises competent, rationale, independent judgments and actions.

With the advent of refined conceptual frameworks for understanding disability (cf. IOM 1991; NICHD 1993; Verbrugge and Jette 1993; Wood 1980) a consensus has emerged that the brute facts of physical function (heart and lung capacity, muscle strength, walking speed) dictate neither disability nor handicap. Instead, it is the social and personal interpretation of impairments considering shared values, expectations, and ideals that produce experiences and patterns of limitations in daily lives. The concept of "societal limitations" is gaining wider acceptance. It refers to "restrictions attributed to social policy or barriers (structural or attitudinal) which limit fulfillment of roles or deny access to services and opportunities associated with full participation in society" (NICHD 1993). Verbrugge and Jette (1993) propose we adopt the term disablement process, widespread in European science and policy, into American discourse in place of disability in order to emphasize the social and processual

dimensions. The current dearth of knowledge about these processes is illustrated, for example, by Verbrugge's (1992) longitudinal studies of arthritis. They revealed how after the onset of the pain and limited joint functioning, the decline in abilities to walk and do daily activities was followed within two years by improved functioning at daily activities as people accommodated to the impairments (e.g. using adaptive equipment, help from other people, and choosing new activities). That is, the level of *disability* diminished even as the arthritic *impairments* remained. Studies of perception and management of the sociocultural domain of personhood can contribute to models of the disablement process by expanding the focus to include cultural categories.

The inability to carry out socially expected activities and roles in the workplace, home, and community diminishes one's standing as a full adult person. One result is a loss of public value and prestige in the community. Cultural *images* for incapacity and dependency convey meanings of being childlike dependent, incomplete persons, sometimes referred to as infantilization of the disabled and aged. These negative judgments and images produce feelings of low self-esteem and what Robert Murphy (1987) labels "impetuses to withdraw" in isolation and passivity or hopelessness. It is precisely these cultural images that motivated disability activists to advocate removing the phrase "the disabled" in favor of "people with disabilities" to emphasize the person instead of the limitation.

The social stigma embodied in denigrating labels and treatment of people who are visibly different or deviate from norms for behavior and appearance the desire to avoid social stigma and to preserve one's image as a whole person and self-esteem and prestige. Among the choices are either to increase the visibility of being different or to abstain from interaction and become a non-person. Withdrawal or avoiding social activities and roles (becoming an invisible person) is one strategy, another is to acknowledge the visible differences. In order to remain in the roles and identities vital to adulthood people may adopt strategies of passing, denying problems, or withdrawing from situations where they are visibly disabled. What has traditionally been viewed as psychological coping mechanisms needs to be viewed doubly as addressing cultural concerns. The management strategies for impairments and

disabilities may focus on remedying cultural level handicaps. That is, in addition to solving instrumental needs in daily life coping strategies may serve to redress threats to adulthood. Different focuses for management strategies highlight different models of the person. Normalizing personhood eroded by disabilities can be pursued by persevering in social roles and using the work ethic.

Disability impacts a large number of people – approximately 16% of the working age population in the EU is afflicted with a long-standing health problem or disability (European Commission, 2007). Due to the ongoing ageing of citizens of industrialized countries and the associated increased susceptibility to mental and physical disorders this figure is likely to increase in the future. Disabilities are extremely diverse and are not a fixed characteristic of individuals. They vary widely in type, severity, stability, duration and time of onset. These characteristics influence individual capacities and willingness to become entrepreneurs and to sustain such a status.

Many disabilities are invisible to the eye, yet popular stereotypes of disabled people as permanent wheelchair users or as blind from birth persist. Disability affects a wide range of socioeconomic outcomes, including labour market participation. People with disabilities face many barriers in the labour market and disability is consistently found to have a negative effect on labour market outcomes, including employment rates and earnings. Variations in disability (i.e. type, severity, quantity) influence labour market participation rates, types of occupation and earnings. Locomotor impairments exert a substantial negative impact on employment prospects, as does mental health challenges and learning difficulties . Self-employment is appropriate for many in this population because it can provide more flexibility than paid employment in terms of workload, work schedule and work location, which can allow for better management of disability and lifestyle. Efforts are needed to increase awareness about the desirability and feasibility of entrepreneurship by people experiencing disabilities, both among disabled and non-disabled populations.

There is some evidence that targeted entrepreneurship training and start-up support programmes can be effective for disabled people, but they are expensive to

deliver and the size of the target group will not always justify separate provision. There is strong potential to adapt existing training and start-up programmes to the needs of the disabled. Business advisors should be ready to recommend self-employment as a career option to the disabled, longer support should be available if necessary, adapted formats (such as Braille) should be used, and language should be adapted to the realities of the clients. Partnerships between business support organisations and specialist disabled support organisations can also help.

The benefits trap problem should be addressed by ensuring that the welfare system does not cut benefits too quickly on transition to entrepreneurship or discriminate unfairly against those disabled people who chose to become entrepreneurs.

The use of assistive technologies and improvements in IT and Internet accessibility for disabled business users should be encouraged. The use of assistive technologies for entrepreneurs (brain-computer interfaces, computer readers for blind people, etc.) can be favoured through grants, loans and training in their use. The integration of technological interfaces for disabled people in key accounting, taxation and other business management software can be encouraged. Better interfaces for disabled people on Internet websites are also needed, starting with improvements in accessibility of online government services, such as business registration and tax filing, and promotion of standards for the development of private websites that are friendly to disabled people.

Employer discrimination is a strong influence on the supply of jobs for disabled people (Meager and Higgins, 2011), although employer perceptions about individuals' capacity to work may diverge considerably from their actual capacity to work. The risk of poverty in the EU is significantly higher for disabled people than for people without disabilities – 21.1% of disabled people face that risk, compared to 14.9% of people without disabilities. The main reason for this disparity can be found in the low employment rates of disabled people, which are a cause for and/or a consequence of their social exclusion.

The European Union has taken a strong position to support the active participation of people with disabilities in society and the economy. This is evident in the Europe 2020 Strategy which aims to create smart, sustainable and inclusive growth to build a society that includes everyone. In addition, the EU has developed a disability strategy (European Commission, 2010), which outlines actions to address specific barriers to full participation in society for people with disabilities.

8.2. Disability in entrepreneurship

To escape poverty and social exclusion disabled people attempt to take an alternative pathway towards labour market integration. Self-employment or entrepreneurship seems to be a viable opportunity for disabled people in parts of Europe as well as in the United States of America (Eichhorst et al. 2010; Bureau of Labor Statistics 2013). Both terms are closely connected, and can be defined as follows:

Self-employment: “Those who work for profit or fees in their own business, profession, trade or operate a farm”.

Entrepreneurship: A combination of the activities discovery, evaluation and exploitation of opportunities to introduce e. g. goods and services, processes and organisation structures that were not existent before (Shane 2003).

Current data from the U.S. Bureau of Labour illustrates that in the U.S. almost twice as many people with disabilities are self-employed compared to people with no disabilities (Bureau of Labour Statistics 2013). Data material from the European Union Statistics on Income and Living Conditions (EU-SILC) shows that the self-employment rates of disabled people in southern European countries like Greece, Portugal and Romania are significantly higher (average of 31.7%) than self-employment rates of people without disabilities (average of 20.51%) in these countries. The average of the southern European countries even lies above the EU-15 average (28.11%), excluding France (Eichhorst et al. 2010). However, high self-employment rates do not equal low poverty risk. Referring to an analysis of the Czech statistical office, the at-risk-of-poverty rate in Greece is about 40.8 per cent. Portugal has a poverty risk rate of 64.5

per cent. Romania's at-risk-of-poverty rate hits approximately 65.1 per cent. The defined at-risk-of-poverty threshold for these inquiries refers to the Eurostat methodology and is at 60 per cent of the median equalized national household income. (Eurostat 2010). States that had their national risk of poverty threshold above the EU 15 poverty threshold, had a lower at-risk-of-poverty rate and vice versa. In fact, the high poverty risk rates in southern Europe are a result of economic and political circumstances. Instead, the leading question is how self-employment rates of disabled people in European countries can be sustainably increased through technology.

9. Current barriers regarding disabled people in entrepreneurship

Current barriers for disabled people aiming to become an entrepreneur and the best practice policy examples that support the elimination of these barriers are illustrated below:

9.1. The role of technology

An individual's decision for the path of self-employment is influenced by different factors. One factor is the calculation of opportunity costs. For example, if the benefits of being unemployed are higher than benefits of self-employment, a decision towards self-employment will probably not be made. Another factor is the degree of independence which positively correlates with the likelihood of self-employment. But the most important factor for becoming self-employed might be self-motivation, as it is the driver which results from factors like opportunity costs or independence. Referring to Csikszentmihalyi's flow theory, motivation can be achieved or maintained if a person's capabilities are sufficient to cope with the demands of a specific situation. If a person's capabilities are insufficient for the task, the individual is more likely to abandon it. Disabled people are often disadvantaged to handle a complex situation like self-employment. The task is much more difficult for disabled people and in some cases even impossible compared to people without disabilities. Due to their disability they lack specific capabilities e.g. visual or mobile capabilities which aggravates self-



employment. In many cases, disabled people don't possess the required skills for self-employment as their education is substandard (National organisation on disability 2004). This handicap can easily decline self-motivation and further lead to damaged self-esteem. To

increase the self-employment of disabled people it is therefore necessary to preserve self-motivation and self-esteem by diminishing disadvantages. Technology is an important factor for disabled people to achieve and maintain self-motivation and self-esteem and to participate in social environment. Assistive technologies (AT), accessible websites and accessible applications enable disabled people to be part of the society. For example, artificial limbs, retina implants or screen readers, which enhance inclusion and self-esteem, establish important conditions for disabled people to start a business. Moreover, technology is a crucial factor for starting a business today. Using state-of-the-art technologies like computer systems, including software and hardware, or manufacturing processes is essential to compete in today's global landscape.

The individual person perspective refers to the basic attitude, e. g. self-esteem and self confidence, of disabled entrepreneurs. The information society perspective concentrates on the access to data materials, which are necessary to start a successful business. At last, the business organisational perspective regards the necessity and opportunity for disabled people to structure business processes and apply appropriate leadership styles. Technology supports an individual to efficiently manage all three perspectives to become self-employed. However, specific capabilities are required to utilize ordinary technology in an efficient and successful way subject to the context. Generally, a higher education level would imply more distinct capabilities to use technology. Yet people with disabilities like physical or cognitive impairments often are limited regarding these capabilities, even if they have a high education. In most

cases this is due to inappropriate technologies that do not meet the requirements of people with disabilities. To strengthen the self-employment of disabled people it is therefore indispensable to provide AT to them.

9.2. The role of policy

Providing accessible technology for disabled entrepreneurs is a multifarious endeavor. Three important roles for policy can be identified. First, policy has to expedite research, development and dissemination of AT. Secondly, policy has to ascertain that disabled entrepreneurs are able to afford that technology or know how to apply for public sponsorships. Third, policy has to ensure that once disabled entrepreneurs own AT, they are able to use these technologies to successfully manage processes that are necessary and obligatory for starting and maintaining a business. The first two roles are of rather great importance according to several studies, which investigated positive impacts of AT on education, employment and independence of disabled people. The third role is a significant challenge for policy, as it requires committing involved public and private institutions to accessibility. In more general, policy is an important factor of influence to promote the development and deployment of accessible technologies like AT and information technology (IT)-accessibility. Facing the ongoing demographic reality, Europe's population evolves towards an ageing society (European commission 2012). Regarding technology, requirements of disabled and elderly people are overlapping. Moreover, ageing increases the susceptibility to disabilities. So, increasing efforts into accessible technologies would support both, the self-employment of disabled and elderly people, which will be an important factor for people with disabilities in future.

9.3. Accessible technology

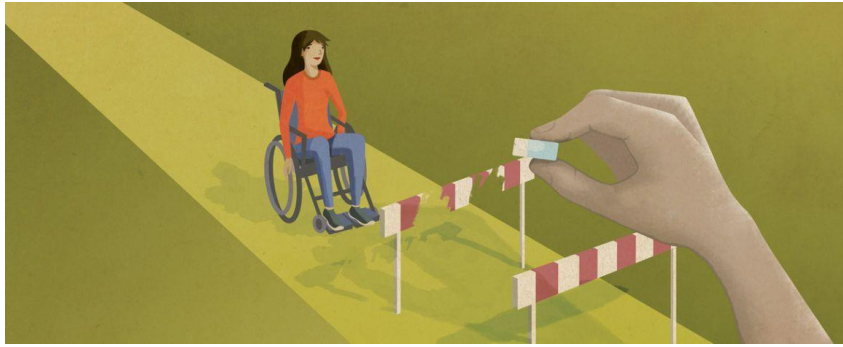
History and development of accessible technologies. Subject to one's disability, many different variants of accessible technology can be found. Basically, accessible technology can be distinguished into AT and IT-accessibility. Each of them either

supports one perspective of self-employment, for instance the individual person perspective, or all three perspectives. The history of AT dates back into the early 1890's when the first hearing aid was patented. In 1936 the first artificial speech synthesizer was developed by H. W. Dudley for Bell Laboratories. Bell Laboratories also developed the first speech recognition system. In 1975 Kurzweil Technology invented the first optical character recognition (OCR) technology, which allows the translation of written text into digital language. IT-accessibility became an important topic in the late 1990's, when the U.S. Government amended section 508 of the Rehabilitation Act of 1973. Section 508 requires all IT purchased by the U.S. Government to comply with specific accessibility standards. After section 508 came into effect, governments of other countries started to consider and adopt similar laws and regulations. For example, the German government passed an equality act in 2002, which summons the public sector to provide only accessible websites and software applications (German Federal Ministry of Justice 2007). These technologies have been drastically improved and extended to enhance the inclusion of disabled people. Current research on AT concentrates for example on gesture-based input devices for the interaction with information, cloud-based AT like screen readers or screen magnifiers that allow disabled people a location-independent access to computer systems and brain-computer interfaces that allow the operation of computer systems or the control of artificial limbs with one's mind . Even though, EU policies were able to embody laws that compel and standards that support public institutions to provide IT-accessibility (United Nations 2008; The National Archives 1995; German Federal Ministry of Justice 2007), a study on web accessibility in European countries conducted by the European commission came to the result that not a single public website fulfils the requirements of the international standard WCAG. A similar study conducted by the disability rights commission in 2004 investigated 1.000 private and public websites referring to the guidelines of the World Wide Web consortium. The study found that 81 per cent of the investigated websites fail to fulfil basic accessibility requirements (Disability rights commission 2004). These results illustrate that the current IT-accessibility is insufficient and thereby does not support the inclusion of people with disabilities. The development of current and future accessible

technologies can significantly support disabled people in one or more self-employment perspectives, respectively.

9.4. Barriers for disabled people regarding self-employment perspectives:

As mentioned above, AT like retina implants or artificial limbs on the one side improve inclusion, but on the other side they enhance self-esteem of disabled people. From an individual person perspective self-esteem is an important factor for self-employment. It increases a person's belief in its capabilities and thereby strengthens a person's confidence that with his own abilities significant contributions to society can be realized. However, self-esteem is only one facet of successful self-employment. To start a prosperous business a person has to analyse the market, find a demand and generate a concept how to satisfy this demand. For all these steps the most valuable resource is information. In today's information society gathering information is most efficient with computer systems. To enable people with different kinds of disabilities access to computer systems various AT has been developed. Blind people can use braille keyboards or touch screens to scan digital information. The latter requires the application of screen reader software that is capable to read out loud all the information displayed on the screen. Physically disabled people, who are not able to operate computer systems by mouse and keyboard devices, can use wands and sticks to simulate keyboard functionalities or trackballs to simulate mouse functionalities. Sip-and-puff systems allow them to communicate with computer systems by using air pressure on a straw, tube or wand (Microsoft Accessibility 2013). A promising technology, especially for physically disabled people, is the execution of computer actions and commands by speech or eye tracking. This allows a more convenient and efficient way to scan and gather information for people with certain disabilities. Research is continuously evolving these techniques to provide more accurate solutions to users. A major prerequisite for the operation of these AT are websites and applications that fulfill accessibility standards like WCAG 2.0. A successful business requires a specific degree of organisation, depending on business size. Business organisation includes strategy, technology to carry out this strategy and an



entrepreneur or employers who work towards the achievement of business objectives. To generate a

business strategy and make a decision for a technology entrepreneurs need information. Nowadays most information is available in digital form. Regarding blind people, the information has to be perceivable, for instance information on a website. Regarding physically disabled people the information needs to be embedded in an operable structure. By applying web accessibility standards like WCAG 2.0 the accessibility of information on the web can be assured. Further, the achievement of business objectives needs continuous planning and monitoring. To enable disabled entrepreneurs in these activities accessible business applications like business process management or enterprise resource planning systems have to be provided or developed. Finally, employers need appropriate leadership to be directed towards business objectives. As leadership style significantly depends on self-confidence and self-esteem, and AT have a major influence in providing these characteristics to people with disabilities.

9.5. Barriers for disabled people in key elements of self-employment

People with disabilities face plenty of barriers that impede or even prevent them to start their own business. The most important barriers for disabled people in key elements of entrepreneurship can be diminished or even eliminated through technology. These elements are business resources, general conditions, organisational structures and customer relationship.

A. Business resources

A successful business requires resources like public relations, funding, suppliers or employees. To acquire these resources and build networks it is essential for

entrepreneurs to be able to communicate with business partners. In business world, communication can be distinguished into different communication channels. The most disseminated channels are e-mail, phone call or voice mail, face-to-face conversation, fax and letter. Depending on one's disability, a person will prefer one channel to the other. For instance, a physically disabled entrepreneur using a wheelchair will prefer e-mail, phone call and letter to face-to-face conversation, if it requires the disabled entrepreneur to visit the business partner in an unknown and maybe inaccessible area or building. For some groups of disabled people, for example blind people, communication channels like paper-based fax or letters are completely inaccessible. These groups require digital communication channels like e-mail or phone call. Even though nowadays most parts of business to business communication is channeled through e-mails and phone calls, important fragments like the negotiation of terms and conditions or the conclusion of contracts still require paper-based communication or face-to-face conversation. Besides communication channels, it is essential to have access to information about business resources, e. g. bank conditions, supplier proposals or recruiting platforms. Up to a certain level this information can be most efficiently gathered on the World Wide Web. As mentioned before, the information on the web has to be accessible for people with disabilities. It must be anticipated that currently, a blind entrepreneur or an entrepreneur who is not able to operate keyboard and mouse devices would have major disadvantages to find appropriate proposals from suppliers, necessary information about bank conditions or suitable employees from recruiting platforms, as the web lacks accessibility.

B. General conditions

Starting a business requires the entrepreneur to fulfill general conditions before and after business formation. Basically, the fulfillment of these conditions is an exhausting process, which demands the entrepreneur to overcome certain bureaucracies. Before starting a business he has to register the business to the authorities. Depending on the authorities' organisation, the entrepreneur whether has to physically visit the authorities or alternatively can print the necessary form and send it per post. Generally, wheelchairs and artificial limbs enable physically disabled people a certain

degree of mobility that facilitates them to choose the first alternative. Be that as it may, for many disabled people as well as people without disabilities it is more convenient to fill out the requested form and send it per post. This in turn presupposes specific requirements to the form. The form has to be self-explaining, so entrepreneurs with low literacy are able to fill it out. To consider the demands of blind entrepreneurs the form has to meet specific accessibility standards to ensure that it can be perceived and operated by those people. After starting a business, he needs to submit its tax declaration annually. To do so, most EU countries provide a paper-based and an electronic form. While a paper-based form is sufficient for most people with disabilities, blind people and people who cannot use their hands require an electronic form, so that a screen reader can read out loud the content for the blind and/or data entries can be executed by e. g. voice commands for the physical impaired. However, most tax return forms from EU authorities do not fulfill the necessary accessibility requirements.

In addition to personal tax declaration, the entrepreneur has to close the yearly accounts in a proper way. Generally, specific software applications are applied to implement appropriate accounting standards. These software applications require the user to operate with keyboard and mouse devices. If a physically disabled person is not capable of using such devices, he would need to employ or assign someone for the job and this would raise additional costs. The same stands for blind users, who are not able to operate accounting software due to a lack of accessibility and have to completely depend on someone hired for the job. In fact, there are many more important business systems such as asset management tools, supply chain management tools or customer relationship management tools. Some of these tools do have a direct relation to law and therefore have a different importance for disabled entrepreneurs than tools that are not directly related to law.

C. Organisational structures

An entrepreneur is demanded to establish an appropriate organisational structure to be able to act and react in the marketplace. Technology plays major significance for e. g. workplace operations, business operations, business accounting or business marketing. So, being not capable to apply such technologies would result in

competitive disadvantages for the entrepreneur. Regarding people with disabilities, one must assume that certain groups of disabled entrepreneurs would not be able to apply these technologies for establishing organisational structures, due to accessibility issues of technology. The management of business operations includes the planning, governing and monitoring of processes and resources. These are essentials to allocate budgets to necessary and promising business areas and thereby maintain competitiveness. Entrepreneurs apply specific software applications to increase efficiency of such business operations. Nowadays, every single function referring to the establishment of organisational structures is deeply intermeshed with technology, in particular IT. It is inevitable for disabled entrepreneurs to apply such IT, if they seek to build necessary structures to successfully compete in the global landscape. However, most IT including these functionalities do not meet the requirements of disabled people and thereby cannot be applied by many disabled entrepreneurs.

D. Customer relationship

The three aforementioned key elements of entrepreneurship are meaningless, if there are no customers to sell the products or services to. It is the challenge of every entrepreneur to transform the customer from an abstract, unknown construct into a concrete individual, whose needs, wants and buying patterns are revealed to the entrepreneur. To learn about one's customers an entrepreneur can make use of communication channels. Regarding startup businesses with a small customer base, face-to-face communication is a viable and effective method. Certainly, this requires a specific degree of mobility from the entrepreneur to visit its customers. Physically disabled people sitting in a wheelchair or missing a limb are often not able to undertake such field services. Technology can provide solutions and support to those people. Modified automobiles enable people in a wheelchair the level of mobility that is required to efficiently manage customer relationships through field services. Artificial limbs can vanquish shame and return self-esteem to people with missing limbs, which supports them to appear with self-confidence to the customer. Regarding an established business with a big customer base, face-to face communication quickly loses viability and efficiency. Other methods and technologies are required to gather customer intelligence. Again, information and communication technologies provide

efficient and effective solutions. Customer relationship management (CRM) software applications are capable to track and store information about every customer. The data contains order information, support information, requests, complaints, interviews and survey responses . These are valuable information enabling an entrepreneur to expand its competitive advantage. Blind entrepreneurs and those who are not able to use keyboard and mouse devices most likely won't be able to access these information, which raises competitive disadvantages.

E. Policy recommendations

There are projects that concentrate on the development and improvement of technologies, which support disabled people in becoming entrepreneurs. However, the average of self-employed people with disabilities in northern and central European countries lies below 10 per cent. The average of self-employed disabled people in the EU-27 (excluding Malta and France) is about 12.74 per cent compared to 12.16 per cent of self-employed people without disabilities. Although these figures seem fairly even, one must consider that the unemployment rate of people with disabilities in Europe is approximately at 60 per cent, while the unemployment rate of people without disabilities is about 36 per cent (European commission 2007). This would imply a higher rate of self-employment among disabled people. Nevertheless, disabled people still face plenty of insuperable barriers which prevent them to become self-employed. It is in the responsibility of policy to develop appropriate measures to diminish and eliminate these barriers for people with disabilities.

9.5.1. Recommendations for appropriate policy measures regarding technology.

9.5.1.1. Regulation of IT-accessibility laws

European countries made a commitment towards IT-accessibility by signing the convention on the rights of persons with disabilities (United Nations 2008). In addition to that, many European countries passed laws and policies regarding the accessibility of web sites and software applications for the public and private sector (W3C 2006). However, there is still a poor level of IT-accessibility in the public sector, which in many cases is compelled by law to provide IT-accessibility. IT-accessibility of the public sector is of rather great importance for disabled people to become self-employed.

Many bureaucratic processes and required information, necessary to start a business, can be accessed through the web.

Besides IT-accessibility in the public sector, self-employed people with disabilities also need the opportunity to communicate with private market actors like suppliers, potential employees or banks. But most of current laws do not go into IT -accessibility for the private sector. The best practice would be to make IT-accessibility obligatory for the public and private sector and harmonize the legal situation of European countries. As this probably will arise serious conflicts between government and the private sector, policy should first tighten IT-accessibility laws for European public institutions. After European public institutions obtained an appropriate level of IT-accessibility, policy may focus on how the European private sector can be convinced and supported, by e. g. subsidies, to take more responsibility for their IT-accessibility.

9.5.1.2. **Educational framework**

In general, education plays a significant role in entering and remaining self-employment. But facts and figures from the national organisation on disability show that only 13 per cent of persons with mild and 2 per cent of persons with severe disabilities complete college degrees. In comparison, approximately 25 per cent of people without disabilities complete their college degrees (National organisation on disability 2004). Research revealed that disabled people with higher education had less difficulty in the working world than disabled people with less education and are more likely to gain financial success and improved 11 vocational options. One of the prime barriers for disabled people to achieve higher education is the lack or inaccessibility of AT. Two studies in this field also detected a major lack of disability support providers at colleges that should help disabled people to identify and use appropriate AT for educational purposes . Policy has to focus these problems and provide solutions to ensure that disabled students get proper education tailored to their needs. For instance, this may happen through disability support providers within colleges or through external institutions which undertake this task. The major goal for

policy should be to ensure equal access to education for disabled people to increase their opportunities on the labour market.

9.5.1.3. AT market standardization

To expedite the complete inclusion of disabled people it is inevitable to provide technologies that neutralize the



impairments induced by diminished functions or the total loss of functions. To generate and disseminate appropriate accessible technologies, research and development (R&D) efforts in universities as well as other public and private organisations are necessary. Common standards are needed to reduce complexity and incompatibility of accessible technologies and enable AT industry players in the European market to grow and prosper. Currently the European market for AT is too fragmented and distinct to allow industry players growth and prosperity. Plenty of national and regional regulations across Europe regarding AT aggravate or prevent suppliers of AT to profitably sell their products and services. Therefore, European policy should concentrate on single market standardization, which would be obligatory to ensure compliance of industry and service providers. Experiences from the U.S. AT market have shown that obligatory standards had a vast impact on the lives of disabled people and can positively affect their self-employment (Stack et al. 2009).

9.5.1.4. Technology funding

Currently European policy mainly supports the development of accessible technologies for disabled people with a wide range of application areas such as, ambient living, accessible transport, accessible computer-interaction and many more (European Commission 2013b). In fact, many of these projects more or less affect the entrepreneurship of disabled people in some way. However, there is not a single call for projects that regard technology for disabled people from an entrepreneurial perspective. For example, there is an urgent need to initiate projects that concern with business critical software applications, such as CRM tools, accounting tools or business

organisation tools for disabled entrepreneurs. In addition, it seems that public institutions do not completely understand difficulties for people with disabilities regarding e. g. business registration or tax declaration. It is necessary to identify and comprehend technology requirements of disabled entrepreneurs, as these can be different and more complex to requirements of disabled non-entrepreneurs. If the entrepreneurship of disabled people is a serious target, European policy has to advertise such projects and provide the necessary funds for implementation and uptake.

9.6. The challenges faced by people with disabilities when starting a business

In addition to facing the general challenges to business startup that all entrepreneurs face, entrepreneurs with disabilities are likely to face specific barriers to entering and sustaining entrepreneurship activities. Some of these barriers, arguably, are very deep-rooted social-structural constraints that impose severe limits on life chances for certain groups of disabled people.

These barriers include:

- Lack of confidence and limited aspirations – people with disabilities may have difficulty identifying a business opportunity, developing this business idea and engaging with the available support infrastructure in a meaningful way, which contributes to low levels of confidence related to business start-up. This is further compounded by the unsupportive role of family and friends who often discourage start-up. This challenge is especially relevant for those with mental health challenges.
- The benefits trap – surveys indicate that there is often a fear of losing the security of regular benefit income when other income is generated. Awareness of eligibility for benefits is incomplete among the population of people with disabilities and contributes to perceptions of self-employment as ‘risky’.
- Lack of relevant business knowledge and skills – people with disabilities often lack specialist business management, legal and financial skills and knowledge due to limited relevant education and employment experience.

- Access to start-up capital – people with disabilities often experience difficulties financing new start-ups due to limited personal financial resources (savings, home ownership), which, in turn, are partly due to poor education and the concentration of disabled employees in low-paid occupations; poor credit rating after long-term benefit receipt; disinterest/ discrimination on the part of banks; lack of accessible information on sources of grants and loans.
- Consumer discrimination – self-employment can be deterred by customer discrimination, reducing the demand for goods and services produced, as well as the rewards to self-employment .
- Increased labour costs – some entrepreneurs with disabilities need to hire assistants to help them undertake tasks that many people without disabilities may be able to do on their own (e.g. moving merchandise, inputting data into computer software), which increases their labour costs and puts them at a competitive disadvantage
- Lack of appropriate business support services – this barrier has a number of dimensions due to the individual nature that disabilities have.
(Boylan and Burchardt, 2002; Jones and Latreille, 2011, Doyel, 2002; Pavey, 2006; Roni, 2009, Enabled4Enterprise, 2008; EMDA, 2009).

First, business advisers are often reluctant to recommend self-employment as a career option for disabled people and sometimes actively attempt to dissuade them. Such views might be a consequence of advisers' inadequate or stereotypical understandings of the activity restrictions arising from specific conditions and/or misperceptions of support recipients' capabilities as well as a genuine regard for the risks disabled people face in starting and running businesses. Second, and crucially, training is not always tailored to individual needs and therefore of limited value to particular programme recipients. For some, support might need to be provided over an extended period of time for recipients with recurring conditions or particular stresses. There is a perception among some support recipients that funders face pressures to move quickly onto the next case rather than provide longer-term support to those assisted (a 'tick-box culture'). Third, support services may not be available in particular formats (e.g. Braille), which makes the support service inaccessible for

certain segments of the population of people with disabilities. This likely will also impact the awareness level of available supports. Fourth, premises where support is provided may not be accessible for individuals with conditions and impairments that impact their mobility. Moreover, this barrier can be increased by challenges related to transport to and from support centres for those with mobility challenges. Fifth, support programmes may use language that is off-putting to people with disabilities. For example, entrepreneurs who experience disability often have lower growth aspirations and may not identify with terms such as ‘entrepreneur’ because they do not see themselves as exploiting an opportunity or being innovative. Sixth, the diversity of impairment and disability means that some disabled entrepreneurs might not perceive themselves as ‘disabled’ and prefer to be supported under mainstream, rather than disability-specific, services. There is evidence that particular groups of disabled people face multiple sources of disadvantage in European labour markets. Disability is more likely to affect vulnerable subgroups within society, for example, the old and the poor (World Health Organisation/World Bank, 2011) and people who experience disability may face multiple forms of social exclusion and sources of labour market disadvantage. Women, older people and ethnic minority and migrant people who experience a disability are likely to face greater levels of labour market disadvantage. Disability-related barriers to entrepreneurship might, therefore, be compounded by gender, ethnicity and age barriers as well as deprived socioeconomic contexts.

To promote the self-employment of people with disabilities policy actions should be taken. First, there is a necessity to regulate and tighten IT-accessibility laws, especially for European public institutions. Secondly, policy requires the implementation of an accessible educational framework to ensure that more students with disabilities are able to complete their college degrees and thereby build themselves a proper basis for self-employment. Thirdly, it is strongly recommended to consolidate and standardise the European AT market to ensure a high quality supply and dissemination of appropriate AT and innovative services for disabled people that help them to start their own businesses. Ultimately, policy can attract attention to and

effort in the development and evaluation of accessible technologies for disabled entrepreneurs by advertising and funding such kind of projects.

10. Agricultural activities and challenges for the disabled

10.1. Disability In Agriculture



There are few occupations in which the evidence of disabling injuries is more apparent than agriculture. A casual assessment of any group of farm or ranch workers will often detect missing digits and limbs, impaired mobility, or a wide

range of scars from accidents with both animals and machines. The widespread prevalence of disability within the agricultural community has historically provided support for an unfounded assumption that since many in this population of workers with disabilities continued to be productive, they generally had few if any special needs. Consequently, many of the benefits associated with recent advance in rehabilitation practices and assistive technology have been slow in being realized by many of these people. Over the past two decades, momentum has grown for ensuring that the rehabilitation needs of rural people, including farmers, ranchers, and agricultural workers with serious disabilities, are being met at a comparable level of enthusiasm, efficiency, expertise, and resources as is found in most urban settings. The disparities, however, are still substantial, and there is still much to be done to assist rural and agricultural communities in becoming more inclusive and accommodating of those with disabilities.

Farm-related injury data have shown that those engaged in agriculture-related activities are especially susceptible to disabling injuries. The National Safety Council USA has historically classified agriculture as one of the three most hazardous occupations. If injuries involving children in the agricultural workplace were included,

agriculture’s injury rate would be even higher. Approximately 5% of nonfatal farm injuries that occur each year are severe enough to prevent the farmer from continuing to farm due to a serious permanent disability. A greater, though undocumented, number of farmers and ranchers continue to farm following a serious injury in spite of their inability to perform essential work-related tasks due to a permanent disabling condition.

In addition to disabilities caused by injuries, farmers, ranchers, and other agricultural workers are also affected by health-related disabilities or a combination of disabilities that restrict their ability to perform their jobs and participate fully in daily living activities. Few forms of rehabilitation or assistive technology appropriate for farmers or ranchers had been documented, and little effort had been made to define the

unique needs of individuals with severe disabilities who desired to remain involved in production agriculture in spite of their limitations.



10.2. Barriers and Opportunities in Returning to Work

The most significant barriers that many individuals with disabilities face when attempting to return to work in production agriculture are the attitudes of those in their family and on the rehabilitation team. The general perception held by many rehabilitation professionals that there has to be something easier, safer, and more profitable than farming or ranching has proven to be a significant hurdle for many farmers and ranchers involved in the vocational rehabilitation process. Family members may also discourage return to farming or ranching due to fear of another injury or the uncertainty of success. On the other hand, a supportive family and rehabilitation team have been shown to be important indicators of a successful transition back to farming or ranching following a disabling injury or illness. The economics associated with production agriculture has also proven to be a critical

factor in determining whether a person can successfully return to the farm or ranch. If there is substantial long-term indebtedness, returning to agriculture may be very difficult, especially if there are substantial medical and rehabilitation expenses.

The lack of alternative employment opportunities in most rural communities often leaves the farmer with few choices concerning potential career changes. Some have moved into related occupations following a disability that have allowed them to use their knowledge of agriculture to remain employed. In some cases such career shifts have resulted in substantially better income and health care benefits, which are especially important to a person with a disability. The potential for succeeding in agricultural production following the acquisition of a disability is extremely low if the individual was not actively engaged in some agricultural enterprise prior to the disability. In most cases, however, the message from the farmer following a disabling injury or illness is clear: his or her goal is to return to the farm or ranch and be productive. In some cases, work-site modifications are needed, while in other cases individuals explore alternative agricultural enterprises that better suit their limitations.

Other barriers regularly identified during the rehabilitation process include:

1. Lack of local specialized health care and rehabilitation services
2. Limited educational opportunities that would provide alternative career training
3. Nonexistent public or accessible transportation that allows independent access to needed services
4. Lack of access to information on appropriate and affordable forms of assistive technology that could be used to accommodate disability within agricultural workplaces



10.3. Training rural persons with disabilities in the agribusiness

The risk of poverty in the EU is significantly higher for disabled

people than for people without disabilities. 21.1 per cent of disabled people face that risk, compared to 14.9 per cent of people without disabilities . A main reason for this disparity can be found in the low employment rates of disabled people, which are a cause for and/or a consequence of their social exclusion (Greve 2009; Hauben et al. 2012). Labor market integration of disabled people through employment is still a major problem in European countries. Employment rates of disabled people are approximately 20 per cent lower than for non-disabled people. Private and public institutions across Europe in many cases do not even fulfill quota-obligations for disabled people . Therefore, the workforce of people with disabilities is a severely underutilized resource in Europe.

Agribusiness is one of the world's major income-generating sources and offers employment opportunities with a wide range of activities suitable for people with different capabilities, skills, interests and aptitudes. By using different methods and ways of accomplishing various tasks, persons with disabilities can successfully establish and work productively in agribusiness enterprises. More needs to be done to provide them with the opportunity to expand their skills, markets and job opportunities so they can participate in a greater range of income-generating activities.

Many persons with disabilities live in rural areas and it has become necessary to identify income-generating opportunities for them so they can become self-reliant while remaining within their community. Disabled persons have long been treated as social outcasts and were offered little support in becoming self-sufficient and capable of taking care of themselves and their families. However, things are changing and persons with disabilities are now being recognized as capable individuals. Initially, all help and support programmes could only be found in the cities, forcing rural persons with disabilities to travel to urban training centres. New approaches are now being implemented with the inclusion of disabled children and adults in schools and the workplace respectively.

Many government programmes offer incentives for companies and industries to hire people with disabilities. The incentives include subsidies for making workplaces accessible to persons with disabilities, special on-the-job training,

payment by the government of part of the disabled employee's salary and tax rebates for companies hiring disabled persons. However, many employers are reluctant to hire persons with disabilities, often because of ignorance, as they tend to see only the disability and cannot recognize the capabilities of a disabled person. Consequently, self-employment offers an interesting alternative.

However, not all persons with disabilities are capable of becoming entrepreneurs, being no different from non-disabled persons in this respect. Several factors have to be considered before starting a microenterprise. Management and administrative skills must be developed. Many people in rural and remote areas, whether with or without disabilities, have already devised strategies and projects that generate sufficient income to sustain their families. These micro-enterprises vary according to country and culture, and can be found in various sectors such as agriculture, aquaculture, sericulture, animal husbandry, fishing, tool repair and much more. Cooperatives have been organized in some sectors and areas.

Small-scale entrepreneurs often encounter several problems, which they manage to solve using existing facilities, resources and understanding. They often know what works and what is needed for their enterprise to be successful. Persons with disabilities need to develop new ways and approaches to accomplish certain tasks and to surmount problems that they would face because of their disability. Small-scale entrepreneurs and especially those with a disability are in a perfect position not only to share their experience but also to teach others like them in tackling problems and running their businesses.

Training rural persons with disabilities in their own community has the advantage of allowing the trainees to remain with their families and to learn a trade that is accepted by the community. Training within their village or a nearby habitation also allows the trainees to exchange experiences with neighbours and make new friends. Since all people come from the same background, have the same culture and traditions, they are better able to understand the needs of each other. Persons with disabilities have tremendous capabilities and courage, and must be given a chance to prove themselves. Capacitating persons with disabilities to become micro-entrepreneurs improves their livelihoods and has beneficial effects on the quality of

their life and health. It helps reduce rural poverty and food insecurity and leads to the better integration of disabled persons into their community. Disabled farmers can become self-reliant, capable of generating regular income and thus be proud and active members of their families and communities.

Governments and non-governmental organizations around the world are developing special programmes to teach new skills to persons with disabilities. The main objective is to enable rural persons with disabilities to become economically self-reliant through income generation as small-scale entrepreneurs. All trainees participate in the training by choice and because they believe that the training course will give them the tools necessary for improving their livelihood. It is the responsibility of the trainer to convince trainees that they can do anything and everything they set their minds to.

Through training, people with disabilities obtain self-confidence and self-reliance. Training in activities such as beekeeping, silk worm farming and raising and taking care of small animals such as hens, goats, sheep, could make persons with disabilities active members of society, working in the operation and successful managers of agribusinesses.

10.4. Potential income generating activities for persons with disabilities

Activities traditionally undertaken by women in rural areas and located in or near the home could easily be handled by people with disabilities, like small-scale plant and animal production, fruit and vegetable processing and preservation. Areas for potential promotion include home gardens (aromatic and medicinal plants and herbs vegetables), indoor plants, flowers, fruit tree nurseries, animal production, dairy products, sewing, knitting, embroidering, carpet making.

a) Food drying, processing and preservation

It is common in households in Greek countryside to preserve surplus production in summer for consumption in the winter months . This activity could

easily be undertaken by many disabled persons and the produce could be marketed for sale . Most notable of these are:

I. - dried fruit, vegetables and herbs

Many fruits, such as tomatoes, prunes, figs, grapes and apricots can be sun-dried. The market for these is expanding every year. There is also a large market for edible and medicinal herbs endemic to the Greek countryside like thyme, rosemary, organum, lavender etc. and traditional herbal teas like mountain tea, sage, chamomile, tilia, that can be easily grown and dried.

II. processed fruit and vegetable

Production of jams, pickles, vegetable pastes, fruit juices could all increase farm income, since this would generally make use of existing skills and technology.

Packaging is probably important in attracting consumers for local products when they must compete against imports. Producers need advice about moving dried and processed products from rural areas to larger outlets in towns. These activities could be implemented in some appropriate areas.

b) Preparation and marketing of dairy products

Small-scale milk processing and cheese-making enterprises could be established in villages where there is a surplus of milk. The knowledge of production techniques is already widespread in several rural families. Sheep and goat milk products, like butter, feta cheese and yoghurt are very popular to natives and tourists alike.

They may be some possibility of reprocessing locally made cheese and packaging and marketing it through urban food stores where traditional local cheeses are sold. This activity could be developed in livestock raising areas.

c) Agricultural production

Some agricultural production activities can be carried out in order to provide income such as: vegetables, aromatic and medicinal plants. Flowers, indoor plants and fruit tree nurseries. The market for aromatic and medicinal plants seems to be important. Vegetables and medicinal plants should be linked with processing and

packaging activities. Different groups of people could implement these activities according to their own interests and skills, one specialized in production, the other in processing and packaging.

Flowers and indoor plants production could interest villages located close to towns where there is a market for this kind of production. Fruit-tree nurseries could also be established, as there is a market for high quality fruit-tree seedlings. Biological- organic produce (fruit and market garden produce) could be an interesting alternative.

d) Establishment and improvement of livestock and poultry raising

This activity can be supported by providing credit facilities and technical assistance. The implementation of livestock raising should be linked with improved forage production for efficient production of milk and meat. Poultry raising, which needs less investment, is less risky.

e) Other activities relevant to agricultural and animal production

- Mushroom cultivation: It is a fairly easy and non- demanding cultivation. Mushroom farmers could work in small self-help groups.

- Silkworm breeding: this activity, used to be very popular in the Thrace area, but has decreased these last years. The interest of this activity is that it can provide small but stable income for poor households and be carried out at group level. This activity can be carried out from April until the end of May. About 500 kg of mulberry tree leaves is provided by 20 trees. Mulberry tree cultivation in appropriate areas could promote the silkworm breeding activity.

- Beekeeping: Beekeeping could be a profitable activity, as Greek honey is a well-known product. Training in this subject is fairly easy.

- Forestry produce exploitation: Some fruits and herbs can be collected from the area's beautiful forests and sold to herbalist's shops or tourists.

f) Handicrafts

Handicrafts like knitting, sewing and carpet making in looms are traditional activities and integrated in the cultural context. These activities could easily be taught

to people with disabilities, and could be supported by setting up micro and small-scale enterprises. There is a gap between domestic handicrafts and those aiming at marketing, which needs business skills and entrepreneurship development. It is recommended to develop this activity at self-help groups level, the final objective being to establish a sustainable group which would be able to manage and run itself its own small enterprise.

10.5. Considerations for training of rural disabled persons



Training must take into consideration the activities of trainees within their community and their level of education . Therefore, trainees should be encouraged to work as a team, helping one another

towards a common goal, which is to succeed in starting a small-scale enterprise. Helping each other, they can all learn more and feel happier during the training. Trainees must be well prepared for training in farming and rural activities and take into consideration the nature and demands of this job. Rural people often work seven days a week since some activities, like animal feeding and watering, cannot be stopped, and it is not possible to close the enterprise during the weekend. Trainers must arrange their schedule according to rural daily realities. The use of a small-scale entrepreneur's experience can be very helpful and highly encouraging for trainees with disabilities. Trainers should include specialists in enterprise development, disability matters, and agriculture and rural affairs. The training can be provided either by one person with all these specializations or by a strategically selected training team. Communication between trainers, trainees, consultants and all parties involved is necessary for an effective outcome. Motivation and capacity-building trainers will

have to prepare trainees for basic learning and for unexpected events that will certainly occur during and following the training.

The **objectives and priorities** in training rural people with disabilities for enterprise development are:

1. To improve daily living skills
2. To impart technical capabilities and capacities
3. To develop entrepreneurial skills
4. To establish a network and strategic partnerships

1. Improve daily living skills:

Trainers should focus on the daily realities of the trainees' community life by direct discussion with the trainees and offering appropriate advice: Confront and surmount problems through open-minded interactions among themselves. Trainees must be made aware of their personal limitations and potentials; they must never allow other people to determine what they can and cannot do. Training sessions should create the atmosphere of a large family reunion in order to encourage exchange, sharing, discussion, compassion and emotional strengthening. Trainees must learn to listen to the experiences of others in order to learn how to overcome some of the problems and be successful in improving their quality of life. Finally, enterprise development will offer trainees the chance to become self-reliant once they are convinced that they are capable of doing, even if they do it differently. Surmounting new challenges is never easy but always brings a feeling of achievement and success.

2. Impart technical capabilities and capacities:

Trainers must concentrate on the skills required for the successful accomplishment of all tasks associated with the chosen small-scale enterprise that is to be established in a rural area. These skills and tasks will vary from one business to another. For persons with physical disabilities, certain techniques may be needed to replace the "conventional way" of doing things. For example, using the feet or mouth instead of hands has proven very efficient. Certain tools and devices can also be

adapted to a person's physical disability. Several programmes developed by government and non-governmental organizations use specialized trainers.

3. Develop entrepreneurial skills All aspects of a sustainable rural enterprise must be reviewed and well understood.

4. Establish a network and strategic partnerships: Regular communication with trainers and all parties involved will provide trainees with timely information about existing training programmes. Trainees should fully exploit opportunities for collaboration with various agencies and organizations. This will also facilitate their acceptance as full members of their community. The following are examples of organizations and institutions that can be contacted for future collaboration or partnership: Agriculture extension offices, local disability training centres, technical colleges, Universities, private companies, local community small enterprises, organizations for persons with disabilities (local, national and international levels) , non-government organizations (local, national and international levels) , central government agencies (e.g. Ministry of Social Welfare, Ministry of Labour, Ministry of Health), local government agencies, UN agencies such as FAO, ILO, UNDP, UNICEF, UNIDO, WHO. Finally, because of the importance of marketing in any business venture, strategic partners and associations may support trainees in advising on market opportunities and become potential partners and clients.

5 Selecting trainees. Persons with disabilities are capable of accomplishing most of the tasks involved in enterprise development. Nevertheless, certain activities may need to be adapted and strategies developed to compensate for the disability. Every person is different and therefore should be allowed to test his or her capabilities and limitations. Trainees must be allowed to develop their own personal way of accomplishing the tasks required in the enterprise. Trainers must be able to give advice, support and direction. (*Hanko J. 2003*).

11. Issues of hygiene, safety and accessibility in relation to the activity in the agricultural sector

Although not well appreciated, farming is among the most hazardous of occupations. There is a significant number of deaths each year, many related to equipment, especially tractors. Farmers are most often in a tenuous economic situation, so there is little to invest in preventive activities or safety equipment.

Until about a decade ago there was little interest in studying health and safety concerns in the agricultural setting, and only a few institutions had programs that focused on this aspect of farming. The National Institute for Occupational Safety and Health (NIOSH) in USA recognized that farming was a dangerous occupation and that the farm setting was more hazardous than had been generally appreciated.

There is a striking difference between the evolving agricultural environment in developed countries compared to developing countries. In North America and Western Europe there have been great advances in technology, mostly related to production, but in some countries these advances also address the issue of safety and health among workers engaged in agriculture. In stark contrast, most of the world continues to toil in centuries-old ways to undertake what is often subsistence farming, with continued widespread food shortages in many parts of the world.

a) Agricultural Work-Related Illness

In addition to the significant problem of fatal and nonfatal injuries associated with agriculture, there is a major problem with various illnesses associated with these activities. Skin conditions, hearing loss, cumulative trauma, respiratory diseases and other diseases. Studies have shown an increased age-adjusted prevalence of cardiovascular disease, arthritis and amputations in farmers as compared to blue collar workers. The prevalence of hearing loss increased only in those farmers over age 65.

Respiratory Disease: Acute and chronic agricultural respiratory disease has been strongly associated with organic dust, ammonia, and bacterial and toxic exposure, and a dose-response relationship has been shown to exist. Respiratory diseases associated with agricultural work, especially for farmers working in large

scale animal facilities, include acute chronic bronchitis, farmer's hypersensitivity pneumonitis, organic dust toxic syndrome, occupational asthma, mucus membrane inflammation syndrome, and sinusitis.

Pesticide Exposure: Pesticides are widely used in the agriculture environment and can lead to health hazards. Among the areas of concern are reproductive issues and cancer.

Musculoskeletal Disease : Musculoskeletal disorders and injuries are common in agriculture. Because a significant number of farmers suffer musculoskeletal problems, including severe injuries such as amputations, efforts have been made to keep these individuals farming. Farmers, often being self-employed, have great incentive to continue working, and a USA national program called Agribility assists farmers in continuing work, supplying them with special tools or equipment that allows them to continue their farming activities.

Gruver et al., in a bulletin published by the Breaking New Ground Resource Center at Purdue University, identified the following hazards associated with farming with a disability:

1. Risks to caregivers, family members, and coworkers providing assistance to the person with the disability. This included children asked to assist with tasks that exceeded their maturity or physical strength.
2. Risks associated with farm equipment operation. Issues raised included the increased potential of injury due to vision and hearing impairments that may prevent an individual from recognizing the presence of hazards or responding to them appropriately.
3. Risks related to the handling of livestock, which can be extremely large and highly unpredictable. Workers with mobility impairments would have more difficulty responding quickly and avoiding contact with unruly animals.
4. Risks associated with fires in equipment and buildings. Several cases of fires on self-propelled equipment have been documented that resulted in injury to operators with impaired mobility.

5. Exposure to excessive vibration and motion that could lead to deterioration of existing disabling conditions. This phenomenon has been documented in cases where loss of feeling had occurred due to spinal cord injury.

6. Potential for falls when climbing with missing limbs or with impaired coordination and balance.

7. Respiratory hazards that are nearly impossible to eliminate due to environmental conditions and may result in more severe symptoms over time.

8. Added risk to some workers from temperature extremes that may not be tolerated well. This includes risks to those with spinal cord injuries who have lost some of their ability to regulate body temperature and to amputees who have highly sensitive stumps

9. Hazards associated with the use of assistive technology that may not be designed or installed properly or may be unfamiliar to the user. Currently, there is no process in place to test the safety or efficacy of assistive technology used by farmers or ranchers

The potential for farm-related injuries is present for both the able-bodied and workers with disabilities involved in agricultural production. There is evidence to suggest that some disabling conditions may increase the risk of injury if preventative steps are not taken. This is not, however, justification for discouraging or prohibiting a person with a disability from pursuing a career in agriculture. The use of more mechanized agricultural practices and the incorporation of appropriate forms of assistive technology have enabled thousands of individuals with severe disabilities to return to productive and safe engagement in agriculture.

As society, especially in rural communities, becomes increasingly inclusive and access to technology becomes more affordable and reliable, the uniqueness of seeing a person with a severe disability working in agricultural production will likely disappear. Vigorous, labor intensive-tasks that a few years ago required two strong arms and legs and a strong back are being rapidly taken over by highly automated machines or replaced entirely by changing agricultural practices, such as the introduction of new herbicides to control weeds. Farmers with missing limbs are compensating with specialized devices that are finding their way into the toolboxes of able-bodied farmers because they make tasks easier to accomplish for everyone.

Ranchers with spinal cord injuries are gaining access to and operating large self-propelled pieces of agricultural equipment with the same ease they have in accessing and operating their modified vans. The question is no longer, “Is it possible?” but rather, “How much does it cost and when will it be available?” If the trend continues toward an increasingly older rural and farm population, the issues of disability within this work force will become even more significant. There will be a need for changes in public policy to ensure adequate funding along with innovative ways to ensure that the rehabilitation needs of this population are not neglected. Nevertheless, it is imperative that this small but important population has their occupational safety and health needs addressed.

12. Conclusions and suggestions for tackling challenges

Approximately 16% of the working age population in the EU is impacted by disability and this proportion is likely to increase as the population ages. Therefore, the issue of social and economic participation of people with disabilities will become increasingly important policy issue over the next decade and entrepreneurship can be part of the solution for some members of this population. People with disabilities are disproportionately inactive in the labour market in all Member States (Applica/CESEP/European Centre, 2007), but there is evidence to suggest that people with disabilities that participate in the labour market are just as likely as those without disabilities to be self-employed. Self-employment can facilitate active social and economic participation and give control to the individual over their participation. Entrepreneurship can allow flexibility in workload, work hours and work location, providing more flexibility in coping with disability than can be often found in paid employment. While business creation and self-employment are not suitable for all people with disabilities, there are several ways in which policymakers can improve their support for entrepreneurship for people with disabilities.

A first approach is to review current business start-up support offerings to ensure that it is available in accessible formats and to educate business advisors on the potential and risks that business start-up and self-employment have for people with disabilities.

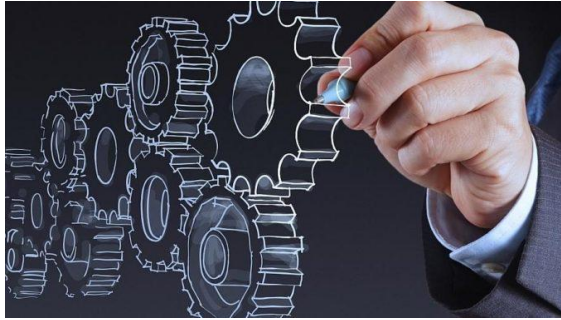
It is a realistic career option for many and they should not be discouraged based on disability alone. An important element of improving information on business start-up for people with disabilities is to increase the amount of information available on the impact of business creation and self-employment income on benefit payments received by individuals. Many people with disabilities receive different forms of public support including disability insurance payments, housing allowances, minimum income supports, etc. and it is important for their decision to start a business.

A second area of action for governments is to support the development and adoption of assistive technologies. Development of these technologies is vitally important for much of this population to more fully participate in daily life. Policymakers can support these development efforts directly with funding and tax incentives and offer financial incentives and support for individuals to encourage the adoption of these technologies. International cooperation is important in this field and governments should seek partnerships with other governments, international organisations and the business sector to ensure common standards and platforms.

Third, there is a limited evidence base that supports the development of targeted training and support that is tailored to the needs and challenges of entrepreneurs and potential entrepreneurs with various disabilities. There are three important considerations for this policy approach. First, the size of the potential client group is nearly always very small given the heterogeneity of impairment characteristics (e.g. type, severity, stability, duration and time of onset). Consequently, policy may need to support entrepreneurs with diverse impairment characteristics in different ways and over varying timescales. Intensive, tailored, one-to-one, or small group support provision, likely produces the most successful outcomes (EMDA, 2009) but such tailored approaches are highly resource intensive. Partnerships with specialist organisations are often essential to the success of targeted approaches because they already have credible relationships with the target clients and policymakers can leverage existing resources to make tailored approaches more cost-effective. Finally, governments should be doing more to ensure that all public websites are accessible. With the Internet becoming the primary way in which governments and citizens

interact, much more can be done to improve the accessibility of online business services such as business registration, tax filing and business information resources.

Facilitating entrepreneurship with technology



Technology can help people with disabilities maintain an active, independent lifestyle and participate fully in society. Within this context, these technologies are referred to as assistive technologies, which are

products that increase, maintain, or improve functional capabilities of people with disabilities. These technologies are wide-ranging and include, for example, artificial limbs, retina implants and specialised computer software. Current research and development related to assistive technologies concentrates on, for example, gesture-based input devices for interaction with information systems, cloud-based assistive technologies (e.g. screen readers or screen magnifiers) that allow disabled people location-independent access to computer systems and brain-computer interfaces that allow the operation of computer systems or the control of artificial limbs with one's mind ..

Assistive technologies are evolving at a rapid pace. Although they are not directly aimed at supporting entrepreneurship, these technologies can help someone in business creation in three broad ways. First, improving an individual's ability to participate in society increases their self-esteem and confidence, increasing the likelihood of starting a business. Collecting and managing information is critical for full participation in today's society and various assistive technologies enable people with different kinds of disabilities to have access to computer systems. Blind people can use Braille keyboards or touch screens to scan digital information. The latter requires the application of screen reader software that is capable of reading out loud all of the information displayed on the screen. People with physical disabilities, who are not able to operate computer systems by mouse and keyboard devices, can use wands and sticks to simulate keyboard functionalities or trackballs to 10 simulate mouse

functionalities. Sip-and-puff systems allow users to communicate with computer systems by using air pressure on a straw, tube or wand (Microsoft Accessibility, 2013). A promising technology, especially for physically disabled people, is the execution of computer actions and commands by speech or eye tracking. This allows a more convenient and efficient way to scan and gather information for people with certain disabilities. Research is continuously evolving these techniques to provide more accurate solutions to end users . Second, assistive technologies can help people with disabilities interact with customers and develop relationships with suppliers, business partners and financiers. Communication can occur through different channels and the most disseminated channels are e-mail, telephone or voicemail, face-to-face conversation, fax and letter. Depending on one's disability, an individual will prefer one channel to the other. For instance, a physically disabled entrepreneur using a wheelchair may prefer e-mail or phone calls over face-to-face conversations if they require the disabled entrepreneur to visit the business partner in an unknown and possibly inaccessible area or building. Third, technologies can help entrepreneurs with disabilities to manage and control their business processes. In addition to the information and communication issues already discussed, the achievement of business objectives needs continuous planning and monitoring. Much work is still needed in this area because many business process management applications or enterprise resource planning systems are incompatible with many accessible technologies (Vaziri and De Oliveira, 2012).

In addition to assistive technologies, information technologies (IT) can facilitate entrepreneurship for people with a disability. IT-accessibility became an important topic in the late 1990s, when the US government amended section 508 of the Rehabilitation Act of 1973, which now requires all IT purchased by the US government to comply with specific accessibility standards. This was followed by similar action by other governments . For example, the German government passed an equality act in 2002, which summons the public sector to provide only accessible websites and software applications (German Federal Ministry of Justice, 2007). Recent efforts on IT-accessibility focus on the generation and acknowledgement of common international

standards like Web Content Accessibility Guidelines 2.0 , which is a major prerequisite for the operation of many assistive technologies.

Even though EU policies were able to embody laws that compel and standards that support public institutions to provide IT-accessibility (United Nations, 2008; The National Archives, 1995; German Federal Ministry of Justice, 2007; WCAG, 2008; W3C, 2006), several studies on web accessibility in the EU found that very few public sector websites meet these international standards. For example, a study conducted in 2009 tested the conformance level of 102 public sector websites and found that none of them met the WCAG standard (Cullen et al., 2009). These results have a major impact on the individual person, information society and business organisational perspective for disabled people. They illustrate that current IT-accessibility is insufficient and thereby does not support the inclusion of people with disabilities in online activities. Given the prominence of the Internet in today's society and business environment, improving the accessibility of IT remains a priority for the industry and government. Computer software and the Internet are also increasingly essential for small businesses to help entrepreneurs manage tasks such as communication, inventory management and accounting. Furthermore, many interactions between small businesses and governments are now online. For example, in many EU countries business registration and the filing of taxes can be completed online. Governments and business support agencies also provide a wealth of business support services and information through online portals.

Policy support for entrepreneurship for people with disabilities

Entrepreneurship can play a role in supporting participation in the labour market and society for people with disabilities. While entrepreneurship is not for everyone and may not be feasible for those with severe or multiple disabilities, it is a feasible option for many people with disabilities. The approach taken to support labour market participation for people with disabilities in the EU tends to favour increasing participation through employment rather than self-employment or business creation. Recognising the range of disabilities and impairments, there are several examples of policy actions that support self-employment and business creation for people with disabilities.

The priority areas for policy development are:

1. Increase awareness about the feasibility of entrepreneurship.

Relatively high self-employment rates for people with disabilities in the EU suggest that there is an interest in entrepreneurship and self-employment among this population. However, this number in real terms is quite small because of the large number of inactive people. Many people with disabilities are held back due to a lack of awareness, lack of emotional support from family and friends, low self-confidence and discouragement from business advisors. Promoting the feasibility of entrepreneurship for people with disabilities will increase awareness of entrepreneurship as a potential labour market activity, not only for people with disabilities but also for others who have an important role in supporting them. The aim of awareness creation should be to increase knowledge of self-employment and small business ownership as a career option and the potential benefits that it can offer. But it is equally important to increase awareness of the challenges and risks that need to be considered so that individuals can decide whether it is appropriate activity given their circumstances

Approach :

Promotion of entrepreneurship activities for people with disabilities should aim to reach three target groups: people with disabilities; their role models and support networks, such as family and friends; and business advisors. One method of increasing awareness of entrepreneurship among people with disabilities is to raise the profile of entrepreneurship and self-employment in labour market support programmes. Many labour market programmes for people with disabilities focus exclusively on job placement, often within the public sector, and ignore, or even discourage self-employment.. It is important to provide enterprise awareness training for advisers whose responsibilities include supporting disabled individuals. This should be disability-specific training rather than simply generic diversity training. This type of training should seek to educate advisers on the possibilities self-employment might afford disabled people as a work option and must also cover the challenges and risks. In addition, it should seek to overcome adviser reluctance to recommend self-employment as a viable option. Policy makers can also promote business creation for

people with disabilities, using role models with disabilities. It is important to showcase these inspiring examples for potential entrepreneurs with disabilities to demonstrate that business creation and self-employment can be achievable. This is important not only to individuals with disabilities but also for addressing negative stereotypes and attitudes in society. Another approach to increasing awareness is to promote entrepreneurship through high profile awards for entrepreneurs with disabilities. This provides public recognition for success and in some cases financial rewards are provided to support further business development.

An example of award programme is the Stelios Award for Disabled Entrepreneurs (United Kingdom) which are administered in partnership with Leonard Cheshire Disability charity. The awards receive considerable media attention, increase awareness of among people with disabilities, inspire potential entrepreneurs and provide financial rewards to help entrepreneurs grow their business. The European Commission is active in this area, operating the European Enterprise Promotion Awards and sponsoring the First European Award for Social Entrepreneurship and Disability .

2. Develop entrepreneurship skills

Many people with disabilities have difficulty accessing education and the labour market and, consequently, many have little work experience and very few have experience with entrepreneurship. As a result, few people with disabilities have had the opportunity to develop the skill-set needed to successfully start and run a business. Supporting the acquisition of entrepreneurship skills can help overcome this lack of experience. The goal of entrepreneurship training for people with a disability is no different than it is for the mainstream population – to increase awareness of the potential of entrepreneurship, to deliver the skills that will increase the chances of successfully starting and operating a business and to develop an entrepreneurial mind-set.

To facilitate the development of entrepreneurial skill-sets for people with disabilities one should provide more support in the education system. People with disabilities are only half as likely to complete training or higher education as people without disabilities and one of the principal barriers is the lack, or inaccessibility, of assistive

technologies which are rehabilitative, adaptive and assistive devices that enable disabled people to perform particular tasks (e.g. enabling mobility, allowing the use of specific artefacts such as furniture and computer keyboards, facilitating communications). Improving the availability and accessibility of these technologies is a first step to increasing educational attainment that will lead to increased skill levels and other individual benefits such as higher self-confidence. Tailored approaches need to assess individuals' business potential, ensure the feasibility of the business idea, address skill and knowledge deficiencies with business education, training and technical support, support the development of a realistic business plan and support adjustments as the business is realised.

3. Support the development, acquisition and use of assistive technologies

Assistive technology can be life changing for people with disabilities. They are becoming more sophisticated, increasingly portable, less expensive and easier to use, and as result, hold greater potential for improving the inclusion of people with disabilities in economic activities and in entrepreneurship.

Existing European policy currently supports the development of assistive technologies for a wide range of applications such as, ambient living, accessible transport and accessible computer-interaction. To further support technological development in these areas, governments can take two actions. First they can continue to support research in these areas through research grants. Second, actions can be taken to improve standardisation in the assistive technology market. Common standards are needed to reduce complexity and incompatibility of accessible technologies. The implementation of obligatory standards has had a positive impact in the United States (Stack et al., 2009) and there is much room for improvement in this regard in the EU. To address this, the European Commission is supporting a number of projects such as Cloud4all, which promotes the development of assistive technologies related to information technologies. In addition, EU can support the acquisition and use of assistive technologies by entrepreneurs with disabilities. This is often done by providing direct financial support, such as a grant, that assists in the acquisition of special equipment and technologies needed when starting a business.

One example of this approach can be found in Greece where the European Social Fund supports a self-employment scheme for the vulnerable unemployed, which provides grants to cover business start-up costs for unemployed people from vulnerable groups. Unemployed people with disabilities are also eligible to receive additional grants to cover up to 90 % of the cost of adapting their workplace to their disability. (OECD/The European Commission (2013). This approach is also used in Austria.

4. Ensure access to appropriate financial support

Access to finance for business start-up is often cited as one of the greatest barriers to business start-up and this challenge can be even greater for entrepreneurs with disabilities. Many potential entrepreneurs with disabilities have little work experience and as a result often have low levels of savings and collateral. It can also be more difficult for them to obtain external financing because they can have difficulty accessing information on financing and sources of investment. At the same time, they may have a greater need for external financing because they may have higher costs during business start-up due to a need to purchase technology or equipment related to their disability or a need to hire additional help to do tasks that many entrepreneurs can do themselves. Public policy should aim to ensure that entrepreneurs with disabilities can access financing for business creation and that funding is available to help them acquire and learn to use specialised equipment that will facilitate business creation and management. The aim is to help entrepreneurs understand how the financial industry operates and the requirements for receiving investment. Finally, bringing together investors and entrepreneurs in special events is important to build networks and relationships, and entrepreneurs can use the opportunity to ‘sell’ their entrepreneurial project.

Another approach is to increase the availability of direct financing, either as small grants or repayable loans. There are a very small number of policy schemes in the EU that provide targeted financial support for entrepreneurs with disabilities. Financial support for business start-up is more effective when delivered in parallel with skills training. An example of this approach is ‘Looking for another sense for

entrepreneurship' in the Slovak Republic, which provides training and funding through a business plan competition.

Financial support might also extend to the issue of benefits. The benefit system should be flexible enough to encourage individuals to create new firms but also to support those unable to make them work. This flexibility should be communicated effectively to those at whom the system is targeted, so unjustified fears are mitigated, reducing a key barrier to business start-up.

5. Continue to improve Internet and IT accessibility

The Internet and mobile communication technologies have become an integral part of society as they are now primary methods of communication and accessing information. However, the benefits are not shared by all because many people with disabilities have difficulty using many of these new technologies as they are often developed on different platforms that are incompatible with assistive technologies. Policymakers can do more to support the development and implementation of accessibility standards that would improve access to these technologies for people with disabilities.

The EU has made a commitment towards improving Internet and IT accessibility by signing the Convention on the Rights of Persons with Disabilities (United Nations, 2008). In addition, many EU countries passed laws and policies regarding the accessibility of websites and software applications for the public and private sector. However, evidence suggests that there is still a long way to go towards achieving the stated objectives in this regard. IT-accessibility of public websites should be improved. The European Union supports Member States in these improving the accessibility of their websites with projects such as the Digital Agenda for Europe (European Commission, 2013). This is critical for people with disabilities who are considering self-employment because many public services are now online. For example, information on business start-up and self-employment is disseminated through websites along with links to other supports. Moreover, improving the accessibility of public websites will help people with disabilities comply with obligations such as business registration and filing taxes. Improving the accessibility of public websites is also a necessary step

for governments to take before considering measures to improve accessibility for the private sector.

The Internet holds great potential for entrepreneurs with disabilities because it can help them overcome challenges related to communication and mobility. However, the vast majority of websites are not in accessible formats and are not compatible with assistive technologies. To make a significant impact in this area, large international efforts are required. There are a small number of projects such as Veritas that attempt to bring public and private stakeholders together to address these issues.

Overall

The vision of the **AGRI-ABILITY** project and the policies placed in action should aim to the enhanced quality of life for farmers and other agricultural workers with disabilities, so that they, their families, and their communities continue to thrive in rural areas. For this target audience, "success" may be defined by many parameters, including: gainful employment in production agriculture or a related occupation; access to appropriate assistive technology needed for work and daily living activities; evidence-based information related to the treatment and rehabilitation of disabling conditions; and targeted support for families.

In fulfilling this mission, certain actions should be taken of which the most important are :

- Developing service capacity through innovative educational programs designed to advance individual capabilities, adapting new technologies, and delivering program content through appropriate educational venues
- Encouraging networking to facilitate information sharing, the provision of services, and funding from individuals or organizations
- Establishing a mechanism which will provide direct services to agricultural workers through individual consultations and other means

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