

Supply chains and local livelihoods

This policy brief provides recommendations formulated from a research project which analysed the needs, expectations and impacts of digitalisation in a rural enterprise centre which focuses on citizen-led innovations, before defining a range of future scenarios considered plausible by informed stakeholders, and studying likely effects on local livelihoods and regional resilience.

Four scenarios were developed, including the two most likely scenarios: one forecasting a positive future outlook, and the other a more negative outlook. In both cases, global supply chains are predicted to suffer a serious breakdown. In the more positive scenario this crisis is mitigated by strong local supply chains, supported by technologies such as an open source platform (openfoodnetwork.ie) which hosts a digital farmers market, and a community digital fabrication studio (FabLab), both of which generate multiple new livelihoods. In this scenario there is increased food security and a thriving local economy. In the more negative scenario, the policy focus is on global issues; funding and supports are channelled away from local initiatives. The same small enterprises that flourished in the first scenario cannot compete with corporate monopolies, leading to increased poverty, unemployment, and lack of access to essential goods and services.

These findings indicate that a policy focus on reinforcing short supply chains and infrastructure necessary to support them would greatly enhance rural resilience and boost local economies in the face of global issues caused by environmental crises and other factors.

CONTEXT

The focus of this research is a community enterprise centre located in Cloughjordan Ecovillage in North Tipperary. Since its development in 2006 the Ecovillage has brought an influx of professionals to a rural area with low population and high unemployment. It is both a community and an educational charity, with a mission to promote and model sustainable living.

The enterprise centre has embraced technological development over the past 10 years: a citizen-led digital fabrication lab (FabLab) is installed on the premises equipped with laser cutters, Computer Numeric Controlled (CNC) routers and 3D printers, and a digital studio is kitted out to host professional standard webinars and podcasts. Co-workers use online communication platforms to work remotely in a way that would not have been possible in previous decades (reducing commuting and keeping more workers based in the community). The centre also hosts a digital farmers' market through the Open Food Network platform, providing an outlet for local food producers in an area where the population is too low to support a physical

farmers market.

One of the issues which the centre seeks to address is the vulnerability of global supply chains to shocks caused by environmental, economic, political, and public health crises. This, along with the environmental impacts of long supply chains and the need to reduce emissions in the coming years, has prompted stakeholders to support the creation of local alternatives, providing local employment and strengthening the local economy as well as contributing to regional resilience. Many of the centre's activities are motivated by the need to increase the proportion of goods that can be produced locally, to build connections between local producers and consumers, and to empower citizens and encourage collaboration. Various funding streams have supported this so far, for example financing the start-up costs of the digital farmers' market.



RESEARCH APPROACH

The research aims to predict the local impacts of social, economic, technological, environmental and political changes in the next 10 years, and thereby inform policy.



PREDICTING LIKELY CHALLENGES TO LOCAL LIVELIHOODS AND REGIONAL RESILIENCE IN THE NEXT 10 YEARS IS NEEDED TO HELP INFORM POLICY.

To keep the focus specific, the research was framed around the following question: **How might a rural community enterprise centre support regional resilience in 2031, in the context of digitalisation and socio-ecological transitions?** Having first defined the needs and impacts relating to digitalisation in the local area over the last 10 years, as well as current livelihoods within the enterprise centre, we then identified 10 areas of critical uncertainty which could have considerable impact on local livelihoods and regional resilience in the next 10 years. For each of these we devised four different plausible scenarios, ranging from best case to worst case, and used the results to draft narratives to illustrate how the situation may look like in 10 years' time, and the challenges local stakeholders are likely to be facing.

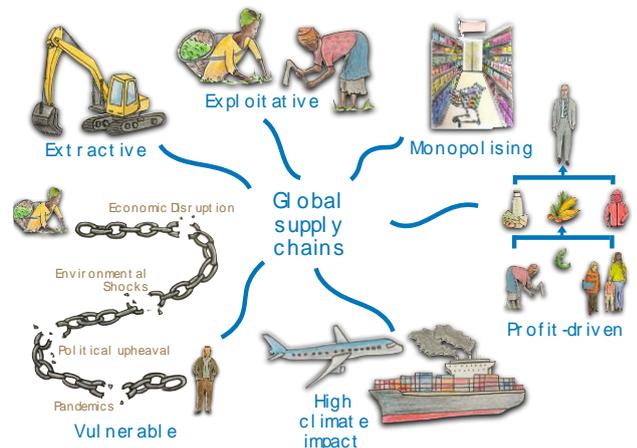
SCENARIOS DEVELOPED

The two most likely scenarios were developed in more detail, and are explained as follows: In the first scenario an energy crisis and high carbon taxes have resulted in fuel related poverty for disadvantaged groups, and greatly reduced travel to and from rural areas. Shopping is now conducted almost entirely online and virtually, and physical shops have been replaced by warehouses that distribute goods for home delivery. Meanwhile, breakdowns in global supply chains cause frequent shortages of essential items from food staples to basic materials such as paper. Local initiatives have become a necessity - the Enterprise Centre's digital farmers market is thriving and has created new livelihoods, with small businesses growing, harvesting, preparing, preserving and selling local produce. Digital fabrication now allows for local

production and repair of many goods that were previously outsourced to factories, and the FabLab provides income streams for technicians, designers and teachers.

However, as in all sectors, raw materials are often unavailable, and electricity supplies unreliable, with knock-on effects including frequent malfunctions of digital tools and cancellations of events due to power outages. All across society people have become accustomed to the 'new normal' of making do with whatever is currently available and functional.

Supply chain breakdown was considered probable across all scenarios, and in the second scenario the resultant local challenges are intensified by a policy focus on re-establishing reliable cheap imports, resulting in withdrawal of supports for local initiatives. Shopping is largely automated: Sensors routinely transmit information on stock levels from household kitchens to supermarket chains, whose algorithms generate automatic shopping lists. Platforms like the Open Food Network provide the only outlet for local producers. As local food is still more expensive than subsidised imports, low income families have struggled to afford food since supply chains went into crisis. Incentives towards a circular economy have ended built-in obsolescence, and replacement parts for many items are now 3-D printed locally. However, a well-known chain has acquired the rights to repair products from most major companies, limiting opportunities for local independent FabLabs who can't access the plans required to make parts.



POLICY RELATED DISCUSSION

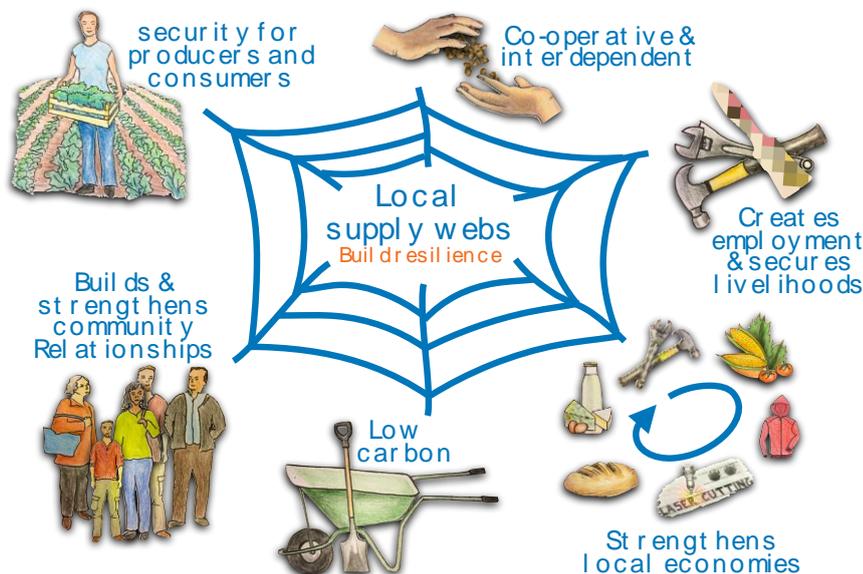
In the first scenario high carbon taxes have made travel unaffordable for rural populations, whose public transport options are at best infrequent and expensive (and often non-existent) and who become effectively isolated within their communities when rising fuel costs make private car use prohibitive. This could be mitigated by vastly improving the rural public transport network, as well as legitimising car-sharing schemes which are unsupported by the current insurance model. Fuel poverty is also a concern highlighted in the first scenario; high carbon taxes should only be introduced in tandem with supports for those with low incomes, to ensure the most vulnerable do not suffer due to rising costs of essential services such as home heating.



A FOCUS ON LOCAL, AND RURAL, IN TERMS OF BOTH TRANSPORT AND SUPPLY CHAINS, IS NEEDED TO ENSURE WE ACHIEVE A JUST TRANSITION, SECURE LIVELIHOODS, REVITALISE LOCAL ECONOMIES AND FOSTER REGIONAL RESILIENCE.

In the second scenario, the policy focus is on bailing out global supply chains. Funding is channelled away from local enterprises, which struggle to subsist, and local food is unaffordable for low income families at a time when imports are hard to come by.

When contrasting this with scenario one, in which small scale local enterprises have been supported by funding, we observe a thriving local economy, increased food security, and local resilience. This could be enhanced by adjusting subsidies: Taxing imports to reflect the true cost of production would encourage the growth of local initiatives by making local produce affordable compared to imports. Such a policy would also help to meet emissions targets by reducing global transportation of goods that could be produced locally. In scenario two, a circular economy replaces the current extract-use-dispose model when we can no longer justify the environmental costs of wasting finite raw materials and filling oceans with plastic waste. The need for this goes far beyond current trends such as reusable water bottles, to the point where all redundant machines and appliances are stripped, and used particles of gold, cobalt, plastics, and other raw materials become resources for new products. Within scenario two this vision falls short due to a corporate monopoly on the information needed to replace the component parts, which both prohibit local enterprises from entering the market, and prevent individuals from knowing how each item should be disassembled and processed at the end of life. Policies to protect Open Source sharing of knowledge and prevent monopolies of information would go a long way towards mitigating this, as well as standardising and modularising component parts.





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POLICY OPTIONS

Green Deal 2.0

- Macro EU level policy to integrate the circular, biodiversity, rural and other aspects of the previous Green Deal into a public goods driven socio-ecological policy, to subsume the Common Agricultural Policy (CAP).
- Primary focus is public goods, a people's agroecology, and the social and solidarity economy as baselines.
- End CAP payments based on historical data; initiate global reparations via debt forgiveness, agroecological investments and priority EU access.

Department of Just Transition

- Entire new government department to cope with various levels of so-called "re-ruralisation" and subsidiarity of territorialisation.

Re-nationalisation

- Public Ownership of core infrastructure on the national macro scale, especially internet and public transport assets, with transport access information fully digitalised, including work clock-ins and travel desks.

Mutual aid mandate

- Whole-of-government policy cohesion to encourage territorial level agri-food and rural synergies.
- Regulations and guidance to generate more action and traction at the micro and meso level, expressed as subsidiarity from Green Deal 2.0 down, a whole host of right-to-repair initiatives.
- Circular economy measures to be written within the framework of this policy cohesion, to enable territorial level agri-food and rural interconnectivities.

Fully homomorphic encryption

- Individual freedom amplification to allow for both privacy and navigation in a digitalised access-based socio-economy sphere, which balances community needs and individualised rights.

This policy brief is published in the frame of the EU-funded DESIRA project and aims to provide recommendations for policy makers on how to support digitalization in the context of the socio-ecological transition in Cloughjordan, Co Tipperary, Ireland.

Contact: Mel White
Institute: Cultivate
Email: melwhite13@yahoo.com

More information at: www.desira2020.eu

