

Full name Aisling Hudson

Email [REDACTED]

What area does your submission relate to?

Town & Village Plans

Your comments

Arklow as a self-sustainable town. clean green industry, marine, habitat, estuary ecological recovery, research based knowledge economy, bio-products, eco-village, eco tourism. PDF format

File Upload

[Aisling_Hudson_Public_consultation_process_Arklow_town.pdf](#)

Created On

2020-01-09

A proposal for Arklow as a self-sustainable town, serving its environs for industry and products and services. by Aisling Hudson. 09 January 2020.

Introduction

Sustainability can mean different things within different ideologies. For the purpose of this submission, I will focus primarily on Arklow becoming an ecologically sustainable. This proposal lays out a version of Arklow, that can support its population and hinterland in a manner that does not overshoot its ecological carrier capacity. A region that lives within its ecological potential and aims to deliver eco neutral job opportunities to its residents. Furthermore, long term goals would be, to be an example for ecological revival for other regions locally and globally who are suffering ecologically, from the results of profit driven economic growth. In no way are any suggestions in this proposal deemed to be exact proposals and should be considered only as suggestions of how the area can be developed sustainably. The main reason for making this submission is that the public consultation has not been explained very clearly and Arklow's place on the hierarchy has been dramatically changed. Also the tourism proposals on the original town plan we underdeveloped and this submission aims to fill that gap. This opportunity is welcomed by myself as when the original proposals were called for I did not have any academic knowledge, and although I did have the ideas, they would not have been applicable under the then 'large-growth town' label. I do not intend to undermine anybody else's ideas of sustainable development or employment endeavours, but I feel I have something to contribute to public planning negotiations.

This submission is broken into three parts. In order to fully understand the objectives of this proposal, I have included some theoretical references for sustainable development with an outline of relevant ideology around ecovillages, and eco-industry. This will lead into some explanation of social economics, essential knowledge for any understanding of sustainable development, demonstrating the inseparable links between the ecological capacity of a region, its economy and social health. The proposal will explain the political economics of sustainable developments and propose some suggestions for a subordinate political economy for the action areas, explaining why a different approach is necessary to promote sustainable livelihoods, and how it will benefit the hierarchy. There will be a focus on the development of the action plan areas, but only because of potential changes to key principles in the town plan strategy and are not meant to be planning or zoning application. They are intended to unpack some options that are in keeping with the RSES and NDP and SDGs, and some detailed suggestions to fill in gaps, in the current town plan, regarding the potential for a tourist industry in Arklow.

Clean, green industries are also suggested, such as hemp production and bio-products. Expanding further on sustainable development and what that could mean for Arklow, economically, socially and ecologically, I will present suggestions for economic sustainability such as, research based marine and habitat ecology centre, and the research centred eco-villages. The industry can be clustered into three different but connected themes, eco-tourism, research and analysis, and hemp production including bioplastics and other bio-products, all ecologically beneficial. The final section and shorter part, sums up the relationship between this proposal and the regional, spatial and economic strategy (RSES), 2019-2031, and the Arklow area and environs, local area plan 2018-2024, explaining what areas have been expanded on in order for the policy to be consistent hierarchically. There will

be an outline of more detailed suggestions for the Arklow town plan, fleshing out the tourism, marine ecology, and educational and research opportunities and not covering the central aspects of the plan as the transition in this region will be too difficult for the scope of my understanding at this time. The arguments put forward in this proposal are all indicative of Arklow becoming a self-sustainable global centre for ecological, social and economic research. Overall, the focus will be on new development in the town, in keeping with the RSES and NDP and SDGs, and some detailed suggestions to fill in gaps in the current town plan regarding the potential for a tourist industry in Arklow. Clean green industries are also suggested such as hemp production and bio-products. Expanding further on sustainable development and what that could mean for Arklow, economically, socially and ecologically, I will present suggestions for economic sustainability. such as, research based marine and habitat ecology centre, research centred eco-villages.

Sustainable Development

Sustainability cannot be pre-planned too rigidly due to incomplete information. It is better to have a strategy in place that encourages fluidity and resilience as we deal with the externalities of the current paradigm. As more evidence presents, plans will need to be altered and therefore “sustainability is the long-term goal, that is, a more sustainable world” (Baker, S. 2016, p.9). A strong sustainability strategy aims to always seek more sustainable means of existence between humans and the natural world and ensuring the same or if possible, more opportunities to thrive are available for future generations.

Our knowledge and understanding of sustainable living and best practices policy are largely incomplete. Sustainability is complex and requires an open-ended approach, using the brightest of minds, working in hives, to propose and test various alternative ways of carrying out sustainable production and sustainable consumption (Baker, S. 2016, p.118). Essentials like food and energy provision, waste reduction and management, and recycling, need to be managed with justice on the side of ecology, and society and we measure this through economic means. Constant impact assessment is a process of establishing feedback systems using impact category indicators (ICI) and using the sustainable livelihoods approach (SLA) (Morse, S. 2010 p. 160-161). Results from all research can inform national and international environmental policy documents, linking all aspects of society together, micro to macro.

Elements of sustainable development have been successfully implemented elsewhere but because of lack of direction, the process has been slow and difficult. As there has been an ecological emergency declared, certain lifestyles need to be eradicated. Waste must be reduced drastically, and managed, to utilise as much energy as possible, from waste as it decomposes, in the safest, most technologically advanced way possible. This balance would be a fundamental aim of the research-based ecovillage. A more structured version, of a sustainable development model, has yet to be actualised in Ireland. Arklow’s future resource input, the national data centre, a transitional project, such as this, can be closely monitored, and used for research purposes to build a viable working model of sustainable transition which can inform processes at higher levels, up the hierarchy.

Sustainable living is difficult on a large scale, if not impossible, and without both structural guidance, funding, and local support and participation, the momentum can fade. The best results come from interaction between ground up, and top down representation. Bundtland’s vision of sustainable development requires changes not just at the technological

and institutional levels but also demands more fundamental social, economic and lifestyle changes (Baker, S. 2016, pp 59-60). There needs to be a multi-angled approach to a sustainability strategy. Research shows that inequality is not sustainable and creates unnecessary divisions and stress in society. Although a small percentage of people/groups/regions of the world benefit at the cost of the majority, this is not a sustainable mindset. On a finite planet we need to shift our mode of production completely. Ecological modernisation theory -Joseph Huber (2004), explores building a new relationship with industry. Industry needs (Baker, S. 2016, p.54). The Kuznet curve explains environmental degradation in relation to industrial development and how waste production increased with industrialisation and peaks when society emerges in a post-industrial environment. This proposal takes that further into a mind experiment where a reversal of environmental degradation begins to take place. Each area or town should have a strategy that shows, in a measurable way, strides towards this relationship being the norm. structural guidance on the critical issues is necessary and should be fundamentally based on academic proposals using research from the local ecovillage. All data collected from the recovery process should be open source and available for the public to query and courses and innovation clinics should create an environment when researchers are working with residents of the ecovillage and the greater area to resolve ecological, social and economic hurdles using research methods.

Ecological Recovery and sustainability

Recovery

On Land: There are also mechanisms outlined to counteract monocrop cultivation and other, even more, ecologically harmful industries within the Arklow region. Initiatives such as creating extensive “ecological arks” (Mary Reynolds), rewilding initiatives and permaculture plots will go towards reducing the ecological footprint of every resident in the area.

Amendments to the current town plan include the provision of community gardens which incorporate the arts, wellbeing, without harming the environment reduction of food miles reduces the ecological footprint further.

River and Estuary: As the local wastewater treatment plant is completed, the river will no longer be used to manage sewage. As the river is regenerated, the process of recovery should be carefully and scientifically documented with the flood barrier design, and renewable energy projects, to be advised by top teams of professionals and those with ecological interests leading the way and not local industry or business. The process should be monitored in order to be reproduced anywhere. Best practices can be applied using international studies and would potentially attract attention from international sources of funding.

Arklow fishing: The local fishing grounds can once again cater for the local community. But research should be considered going forward. The national marine spatial plan should include Arklow as a centre for marine research with lab and training facilities, but also as a resource of a self-sustaining community. As fish stocks are recovering, fishing may be limited temporarily, local fishing companies can be compensated based on an average of previous years income. Their vessels can be upgraded as per requirements, with subsidies and grants available to allow for this transition.

Waste. Arklow, to be sustainable, cannot ignore its own waste. There must be provision for waste management in the sustainable development plan and the best way to approach this is

to maximise any benefits. One way to benefit from waste is to use the energy it creates. The other is to make the area as attractive as possible. Bio-energy from waste is developing with the use of organic matter being used by Energia at Huntstown in north Co. Dublin, (sustainable energy authority of Ireland). Korea have a very interesting alternative using this energy to fuel their metropolitan cities. They have a specific method of covering the rubbish as it is dumped with soil and rewilding it. The waste management area is operating as a tourist park and bring in green income. The landfill is equipped so that the gas is siphoned off and used to power homes. The land is developed into a tourist park used for global research.

Sustainability

Ecological sustainability will depend on the economic strategy of Arklow and is an integral part of any recovery programme. A sustainability programme needs structural implementation. All over the region, more sustainable practices need to be adopted and enabled. The bio-plastics industry, supplying work to some residents, will supply all packaging for items currently using moulded plastic and products can be reused or recycled. It should not be a profit-oriented business, and this will avoid unnecessary energy being used to produce the products. More re-use and recycling efforts on a structural level are needed, with monitoring of resource use, waste production and energy production from designated eco villages. The aim of all strategies is to make waste reduction as attractive and as easy for end users as possible and to make the transition from ecological degradation in pursuit of human development to a sustainable means of living.

The Transition Movement

“The Transition movement. Originating in 2006 in the UK, (formerly called the Transition Town movement) seeks an integrated and community-based response to ecological and economic threats” (Poland et al. 2005).

The transition movement and its network functions at a global level, and helps transition teams enable transition projects by sharing research and ideas. The Irish branch formed in 2008 and have been meeting regularly and are active in communities that are embracing transition projects. They have experience with dealing with conflict within working groups and communities and have developed a suite of tools that are useful in resolving conflict and enabling further sustainable development. In the transition hubs, all kinds of communities and individuals share ideas using these tools. Arklow could have access to a wealth of experience by reaching out to other transition groups. Transition project, Brogwaun, in Wales, is a successful transition programme with similar characteristics of a potential Arklow initiative. Arklow could adapt the transition ethic to sustainable development.

The transition movement has been largely a roots-up movement, because of the lack of initiatives by government. They believe that local knowledge, skills culture should be built into sustainability planning. In the Arklow research-based ecovillage there could be an ongoing documentation of transition in action. “The movement projects that a transition to a low-carbon society is all but inevitable, requiring resilient communities and re-localizing the production of basic needs, while emphasizing opportunities for greater connectedness and celebration” (Chamberlin 2009; Hopkins 2008, 2011; Poland, Dooris, and Haluza-DeLay 2011). Transition is a necessary process that the whole world will have to adapt to, so it is best to have empirically documented successes and failures in order to reduce the need for

reactive governance and future crisis. In a purpose-built transition sector of an urban population the culture that would develop would be unique and would affect local culture, however this is what is necessary in order for the SDGs to have a chance of being achieved.

“cultural studies and cultural geographers emphasize how a distinctive culture of place emerges from the pragmatic and routinised interactions between engaged participants and social processes” (Poland et al. 2005).

Without engagement in the process the local community do not take up the responsibility of individual transition, which is necessary if patterns are to become habitus. The difference between most organic transition ventures is the lack of structural interference. Problems have arisen due to differences in individual needs or beliefs, causing communication conflict. I propose that Arklow’s transition project include a research-based eco village which incorporate structural elements to avoid issues that have caused problems in other developments. Home design, cluster layout and other functional decisions, should be decided based on best practice principles, rather than personal choice, democratic means or consensus. The Cloughjordan project, for example, ran into these difficulties, along with externalities of housing market collapse (Winston, N.2012 p.95-97). If the units are considered a social good, due to the research aspect, no tenants can own dwellings, and in another sense all residents have ownership. Other properties can adopt the principles, near the eco-village, and trade their property on the market as they wish, and residents of the research village can choose to transfer to another are whenever they wish. Foundation level feedback systems, monitoring community resource consumption, and waste production, as explained in the section outlining the research-based ecovillage project. This is purely for research purposes, and to simplify the advancement of the project. Other projects with less structural influence can join the research project, by contributing data, and leave it, at will. All empirical data will be welcome and useful in accurately predicting the consequences of social policy change, affecting sustainability, in the future. With enough data, accurate prediction regarding consumption needs and abilities can be made, reducing waste, poverty, hunger, environmental degradation, and all the other SDG’s, in a timely fashion, before the deadline of 2030.

“the movement projects that a transition to a low-carbon society is all but inevitable, requiring resilient communities and re-localizing the production of basic needs, while emphasizing opportunities for greater connectedness and celebration” (Chamberlin 2009; Hopkins 2008, 2011; Poland, Dooris, and Haluza-DeLay 2011).

A marine and habitat research centre, including labs, lecture theatre, board rooms. A place where specialists and academics can carry out research and a longitudinal study as the river and estuary becomes cleaner after the treatment plant is running. The marine centre can track the ecological recovery progress in a scientific environment and make recommendations on best practices, engaging with hierarchical agents from national, European and international level. The aim is to replenish fish stocks, flood risks, erosion prevention, habitat recovery and the sand dunes. Measuring the ongoing and changing carrying capacity of the area until such time as an abundant stock is available and fishing practices are of the highest and safest standards. The development of this second harbour could facilitate the moving of bio-products along the east coast

Social science research centre with teaching facilities. The eco village, with its unique research centred ethos, is an ideal environment to study many social science concepts and theories and apply them in a controlled set and setting. This can then inform policy right up the hierarchy. As explained under the ecovillage section, more detailed data analysis on lifestyle choices is possible when data is constantly collected in an organised way. Data analytics of information can be used for good or for evil, like all discoveries and technological advances. For this reason the data extracted from the eco village project will always be publicly available, open source, and training will be available on how to use the database to research any topic. The basic level of data sharing is automatically built into the agreements that encompass this eco-village, those being stated, energy consumption, water, energy created, waste and free services or goods associated with being a member of the community. Any data can be open source. The more data shared, the more accurate the predictions relating to community needs, the zeitgeist, drives, and overall health, and a measure of trust for the projects goals and outcomes will be evident in how much information is shared voluntarily by the community.

Research-based Ecovillage

As part of this proposal is a somewhat novel concept of a purpose build residential area, close to the data centre in action area three. This residential area would be designed as part of a longitudinal social scientific study of ecological sustainability. Findings from these residences can influence policy relating to environmental preservation. It would be expected that a lot can be learned about sustainable production and consumption, the building of social capital, sustainable livelihoods, and it can be used as a model for sustainable developments elsewhere as the based indicators are related to large-scale consumption, production and waste management issues.

This village will also be useful in developing strategies to reach the 2030 SDGs. It will help attract funding in conjunction with the universities in Ireland, raising the profile of Arklow as a provider of knowledge-based industry. It will provide a working model with real potential for transition to a sustainable version of reality, where equality, equity and life long learning are almost unavoidable. A place where it is easier to be eco-friendly, than not. This type of research project will not only be useful, but necessary if a sustainability model is ever to be establish. Connecting to the ecovillage network will allow the Arklow project to bypass a lot of collaboration hurdles (Dawson, J. 2006), and also connect Arklow on a global level with other like-minded hives around the planet.

Identifying the towns maximum sustainable yield (MSY) (Morse, S. 2010, p. 69), in terms of our fisheries, and the building up of fish stocks in local waters, or ability to provide locally produced food to reduce food miles, enabling local individuals and groups to contribute to the provision of self-sustainable food and energy source, and waste management, which have been identified as a key to sustainable development. Promoting sustainable development is about steering societal change at the interface between the three pillars of the social, the economic and the ecological dimensions (Baker, S. 2016, p.9). If change is to become habitual, it needs to occur on the macro and micro levels simultaneously in society. It should become part of “the civilising process” (Norbert Elias, 1939). The founding fathers of sociology all had strong views on the importance of social cohesion for societal health and wellbeing. Social norms provide strong guides for the masses. They work

better than legislation. Historically religion has been one of the strongest shapers of society, This is expressed in modern terms by “Normative principles [which] are moral rules that specify what is good or bad” - Principles of need, intergenerational equity, Intra-generational equity, common but differentiated responsibilities, justice, participation, gender [and all forms of] equality (Baker, S. 2016, pp 44-45). Many fears centre around control. Questions such as, who establishes these normative principles? As stated, historically religious groups established these norms. An example of which can be seen in social policy practices of the newly declared free state. These norms were not healthy for society and it is understandable why many fear similar situations being repeated. This submission argues that economic policies of liberalism and neo-liberalism, such as, financialisation, commodification of everything and everyone for profit, environmental degradation for profit, and austerity measures, create equally harmful normative principles, and encourage the throw-away society we know today. A more empirical evidence-based alternative means, for normative principle-setting strategy, would have better outcomes for society and the environment, and because we critically analyse the outcomes of such an approach, we do not risk getting trapped in situation of dominance, or structural violence. The trajectory of the project will alter, as more data are extracted from the indicators, as mentioned above. Influencing community resource usage, energy creation and waste management.

The Goals of the ecovillage are on the macro and micro-levels and centre around developing sustainable transition strategies. This will be achieved by constantly interacting and monitoring on the micro level for outcomes of policy change on the macro level. ICIs can be established to continuously monitor the outcomes of the latest sustainable production methods. The idea is to reduce over-production, over consumption and waste. As the project gets more successful at accurately predicting the needs of the community, within the boundaries of the carrier capability, the residents should experience micro level improvements in the quality of life. Automation and organisation of systems will reduce the work week of individuals, as will the lack of commuting time, by half. There should be no need to own a car within the eco-zones as routes on internal public transport should be regular and on time, serving all employers and should be free to users. This lowers the need for high wages, as does the provision of locally grown food some of it free, and homes heated with bio-energy. Ideally residents should be able to live comfortably on a universal income payment, and only work 20 hours a week, within the local community.

Micro-level goals

- To de-commodify residents by providing universal style benefits without burdening the environment or any specific demographic within the population.
- To change the experiences of individuals through open source, evidence-based measures that can be quantified and reproduced elsewhere.
- To create a scenario where the SDGs are possible and not just an ideological lip service.
- To enable maximum participation, the use of networks and partnerships in governance but to also ensure that fundamental aspects of ecological recovery are built into the culture of the eco-villages.
- Network with transition towns, eco villages, permaculture groups, SDG working groups, national and international university programmes.

Allowing the community build on the shoulders of giants, rather than being isolated and dependant on structural sources of knowledge.

Governance of sustainable development can be complicated because it involves participation by all levels of society. All forms of capital need to be recognised as valuable and utilised efficiently in an empirically monitored process. Morse (2010, p.164), incorporates De Haan's capital pentagon theory (2000) in accounting for all forms of capital. In the research zone, developing methods of producing abundance in renewable capital resources across the pentagon is the key to sustainability. Social capital (Coleman, J. 1990, p. 300), for example, within communities, allows society to operate smoothly, in a more economically viable manner, increasing levels of trust. There are various ways of building and measuring social capital in communities, but it is accepted that for sustainable development, community involvement and a sense of responsibility, is essential for a successful self-sustainable project. There are different governance strategies considered effective, and this submission proposes a mixed-type governance. In keeping with the RSES a hierarchy method is welcomed. A new element below the town plan level will be proposed in relation to the later developed 'research-based ecovillage project' but above the town plan level the normal hierarchy is considered of national, European, and international bodies governing sustainability. Market governance will also be applied but not with the same intention as regular market governance. Market based tools such as taxes, subsidies, and offers will be used not for profit but to guide social behaviour towards healthier lifestyles, like the sugar tax now, but more closely based on scientific research and locally monitored reflexive governance (Baker, S. 2016, p.89).

Evidence-based, transition of path dependency is achievable. This proposal argues that neo-liberal policies are incompatible with sustainable livelihoods. Evidence already exists that alternative political economic models need to be explored. The central theme running through this submission is transition, based on measurable indicators, academic research and an open ended process, to reflect the open ended character of sustainable development, always aiming to increase sustainability and reduce entropy within and between ecological, social and economic systems. Research is the central theme of this sustainable development strategy. It proposes that Arklow becomes a centre for sustainable research development. The reason for this is, through the industrial development of Arklow, the estuary and habitat of the local environs have suffered dramatically, and a revival will be challenging but worth undertaking. There are also other challenges to consider having such an active estuary, with flooding being a main concern. The reviving of the areas mentioned deserves attention and when the rest of the proposal is considered, a research centred agenda for the town plan makes sense. No time can be wasted on undocumented trial and error efforts. Academic attention is critical from start to finish and the opportunity of having the national data centre on hand resolves some of the barriers to this project.

Attracting clean green tourism to Arklow

Residences for visiting academic researchers would encourage the interest of global research funds. It would be ideal to have accommodation onsite or within a short walking distance. Students could also use these facilities if undertaking a marine, or sustainable development module. These centres of research could become a hub for national and

international universities to run Erasmus programmes or conferences, or, for longer post graduate studies.

Eco-tourism is a primary industry that many locals can tap into for income. The town should have at least one low cost accommodation facility, like a hostel, with a campsite, with eco-friendly facilities. Eco-tourism has the potential to capture and ever increasing ecologically aware cohort of tourists. More people are taking onboard warnings about their eco-footprints and the closer to home populations can be targeted.

Educational Tourism can be transient, short term, and longer-term. Students, lecturers and researchers, NGOs, Corporate clients, and blue-chip companies would be attracted by the educational and research facilities and the research-centred ecovillage(s). Because the visitors are coming to study and experience environmental and ecological sustainability strategies, it could be assumed that they will be mindful of the environment. Generally, these tourists would have less of an impact on local ecology.

Creative Tourism

For visitors to the town, and townspeople alike, sustainable industry needs to be attractive and easy to participate in. The arts are an ideal way for individuals to connect with others, and their inner element, helping with depression, tragedy, recovery, and general wellbeing.

“the Transition movement embraces the opportunity to turn crisis into an opportunity to build more resilient, convivial, and vibrant local communities, declaring that “if it’s not fun, it’s not sustainable” (Hopkins 2008)”

Arklow has an abundance of creative endeavours, particularly stage-oriented schools. For these schools, it is difficult to run performances or festivals because of the lack of appropriate communal space in the area. The town centre needs a facility for smaller shows along with a facility in one of the action areas which can hold larger performances, along with workshops or classes. One of the arts centres should also have communal spaces for artists to practice, and exhibit, and communal equipment for screen printing, photography, ceramics and so on. A market-place for selling artisan products and services, and local produce, would attract residents from the environs and further afield. A network of similar centres could be established to avoid carbon footprint. The industries in the town should aim to satisfy locals and environs on a regular basis and attract long term visitor from abroad. Facilities and opportunities within the research zones, and beyond, should be for people with all levels of physical ability, all genders, all ethnicities who wish to experience an eco-centred lifestyle.

Green industry - Hemp based industry

Hemp farming. The benefits of hemp farming are multiple. If mono crops are a necessity, and for large scale provision it is, hemp is the best option. Because of the root system of the hemp plant, drainage of land improves over time rather than the opposite. Another plus for hemp mono crop is that the uses for hemp are very broad and therefore provides more opportunity for local employment. Local employment reduces the environmental footprint of the town overall, adding to the sustainability outlook.

Multiple industries based on hemp

Medical grade CBD products, THC/CBD products. Topical, tinctures, pure essential, food supplements, beauty products, animal, and human use. **Medium grade** animal bedding, food and nutrient supplements. **Industrial Grade** Building materials, bio-plastics, land recovery.

Hemp Employment

Crop Production: Seed grower, cultivators and suppliers, production equipment, manufacturers and suppliers, Cultivation of certified products, Cultivation of raw materials for the nutraceutical market, Testing, validation, and quality control. **Processing:** Industrial manufacturing, Nutraceuticals, Food manufacturing, Cosmetic manufacturing. **Supply/retail:** Distribution, Logistics, e-commerce, retail outlets.

Hemp harvesting and processing will require a purpose-built unit. To give an idea of the scale of land needed and facilities required for a general-purpose hemp processing plant I have included a brief case study of Hemp Inc. this company has been active in the cannabis market in California but have recently branched out into biomass. The facility has bi-coastal processing centres including the 85,000 square-foot multipurpose industrial hemp processing facility in Spring Hope, North Carolina, a state-of-the-art processing centre, in Medford, Oregon, and a 500-acre hemp growing Eco-Village in Golden Valley, Arizona. The 85,000 square foot facility sits on a 9-acre campus. It is environmentally sustainable. The material for hemp bioplastic is processed at the Company's North Carolina facility, which is the largest of its kind, and has completed positive beta testing. The blend will be provided to multiple companies to help fill the growing demand for natural and hemp-based products for the bioplastics industry. According to Grand View Research, bioplastics are predicted to control five percent of the plastics market by 2020 and rise to 40 percent by 2030 (Hempinc.org)

Bio-products from hemp: Hemp Bioplastics, Hempcrete, blocks, logs, (hemp and lime), insulation, medicine, food, clothes, paper, brown field recovery, eco mono-crop, paper, moulded plastic, textiles, body care products, animal feed, animal bedding, nutritional supplements, essential oils, animal medicine.

Benefits of hemp bio-plastic industry

- Naturally Biodegradable and Recyclable-When hemp plastic is produced, it's generally made using a biodegradable polymer that makes it into a plastic-like material we're familiar with.
- Highly Renewable-Being able to continuously reproduce material in an eco-friendly, renewable way is the only way we'll be able to keep the planet's resources sustainable.
- Easy to Manufacture-One of the major benefits of traditional plastic is that it's incredibly easy to manufacture in abundance.
- Strong and Lightweight-We tend to find high-quality materials to not only be highly durable but also lightweight.
- Non-Toxic-Even over the short-term chemicals from plastic break down and enter water. These harmful toxins can affect the endocrine, or hormone, system in our bodies, which can heavily disrupt the natural stasis of our body's immune system. Hemp bio-plastic, is known to be 100% non-toxic.

Summarising this proposal contextually, within the scope of the settlement hierarchy (RSES, p.13) principles, Arklow has great potential to be self-sustainable, incorporating growth only under strict observation by academic researchers. Serving residents, and those of its hinterland. If provision is to be sustainable ecologically, the maximum yield capability of the town must be identified. Reducing the carbon footprint of every individual should not cost the individual more money although a complete change of mindset and lifestyle is necessary. This change, or transition, should be enabled through structural changes that promote healthy lifestyles. The market is unlikely to accommodate any such initiative, due to lack of financial profit, and for this reason, hierarchical intervention is necessary. Transport within Arklow should be as clean as possible and be reliable. Transport out of Arklow could be made accessible by shuttles, to the motorway, from a central station. Nobody who works and lives in Arklow should need a car, and people who work in places that are not on a feasible public transport grid should be given assistance to have electric cars, with more charging points.

Balanced growth is key to sustainability. This approach would enable balance and sustainable growth of all future developments and simultaneously lighten the “ecological rucksack” (Morse, 2010, p.116) that industrialisation has created for us to reverse. This proposal allows progress to be evidence driven, accountable, open, inclusive and adaptable. It is viable economically, if initial investment can be secured. A project on this scale, with this potential should qualify for international funding from development agencies, if global agreements are worth making. If agreements are ever to become more than lip-service, if we are to survive ecological disaster, we need to use every second. Every day is another wasted, as the planet literally burns, in front of our eyes.

Healthy placemaking (RSES, p. 16) is a key section in the spatial strategy and this proposal promotes healthy living and lifestyle. It promotes healthy industry and exports, its core principle is ecological health. This, along with the use of market tools such as incentives, data collection and research, optimal health of production and consumption is likely to be achieved in record time. This is by lowering entropy within production, consumption and waste systems.

Green infrastructures (RSES, p.17), are already in progress but can be extended to other locations of touristic interest, with eco-lodges placed along the routes. Tourists then have the option to walk around Ireland, safely with guided routes and accurate estimations of difficulty level, estimated average length it takes to the next lodge, and so on. This is successfully achieved right across the Bulgarian mountain ranges.

Climate action (RSES, p.8), is proposed on multiple levels. It aims to reverse ecological damage but it also aims to help the local bee population and other pollinators recover. The rewilded areas, and ecological arks will counteract and mono-crop cultivation in the area and will provide adequate habitat for species recovery and sanctuary. There would be an expectation that the bird population would also grow and diversify. This can be observed and guided by academic experts and professionals and enthusiasts and could also attract clean tourism. Reducing food miles, commuting, the need for personal vehicles, clean public transport, energy from waste, bio-energy and bio-fuel all go towards reducing the carbon footprint of the town.

Economic opportunity in the region is expected to sustain the local residents and those of Arklow's hinterland. New developments are expected to cater for the new residents and attract knowledge based, clean, executive, blue-chip national and international interest, outside the scope of the RSES. Investment is possible from the private market and public sector, and investment from SDG initiatives, sustainable development research funding, and green tourism and development and production investors. All new initiatives should have a negligible environmental impact or a positive impact and the industries currently operating in the area that have a negative impact can contribute to the process by incorporating local green initiative into their annual corporate social responsibility portfolio.

Strategic connectivity within the town and hinterland should be easily and cheaply accessible and free when possible. Marked routes by foot and bike along the coast and to hinterland towns and tourist destinations will not impact on the environment and shuttle services should connect the town to the national development plan, connecting Arklow to national, regional and international corridors, without the need for personal vehicles. To develop the second port to enable sea transportation and marine and rescue training facility. Applying this proposal to a revised local area plan for Arklow and environs, it can be said to have broadened chapter eight on Tourism potential, chapter eight, it has proposed several alternative clean and green production industries, expanding on chapter four, economic development and employment. Of the 'keas areas' in the LAP, this proposal focuses on the action plan areas chapter eleven, putting across a strong plan for sustainable development, focussing on altering Arklow's trajectory from a large growth town, based on industrial development with a small tourist section, to being a leader in knowledge based industry, clean, green production and consumption and firmly driven by evidence based collaborative policy.

This proposal has put forward a theoretical model of sustainable development for the revised Arklow town plan, which is consistent with policy of the RSES, the NDP and international best practices of sustainable development. Once established, structural expenses should reduce dramatically, and this reduction should occur in a relatively fast timescale due to the open source element of research and data collection. Corruption should be reduced as should the need for reactive governing, although reactive governance will be essential until adequate data are available to inform policy resulting inaccurate predictions of sustainable production and consumption. The central focus of clean and green employment and investment opportunities was expanded on and the potential of ecological recovery was presented with various proposals given consideration.

References

- Baker, S. (2016) Sustainable development, Routledge, Oxon.
- Coleman, J. (2010) Foundations of social theory, The Belknap Press of Harvard University Press, Cambridge, Massachusetts, and London.
- Coccosis, H. (2009) “sustainable development and tourism: Opportunities and threats to cultural heritage from tourism” in “Cultural tourism and sustainable local government”, Girard, L.F and Nijkamp, P. (eds), Ashgate publishing limited, Surrey.
- Dawson, J. (2006) Ecovillages: new frontiers for sustainability, Green Books, Devon.
- Dietz, R and O’Neill, D. (2013) Enough is enough: Building a sustainable economy in a world of finite resources, Routledge, San Fransisco
- Girard, L.F and Nijkamp, P. (2009) *Narrow Escapes: Pathways to Sustainable Local and Cultural Tourism*, in “Cultural tourism and sustainable local government”, Girard, L.F and Nijkamp, P. (eds), Ashgate publishing limited, Surrey.
- Poland, P. et al. (2019) "The emergence of the transition movement in Canada: success and impact through the eyes of initiative leaders", *Local Environment*, 24(3), pp. 180-200.
- Morse, S. (2010) Sustainability, a biological perspective, Cambridge University Press, NY.
- Winston, N. (2012) Chapter 5, "Sustainable housing: a case study of the Cloughjordan eco-village, Ireland. In *Enterprising Communities: Grassroots sustainability innovations* Anna Davies (ed), Advances in eco politics, Vol 9, Emerald Group Publishing ltd., Bingley.

weblinks

- Eco village, Cloughjordan: <http://www.thevillage.ie/> Permaculture: <https://permaculture.ie/>
- Community gardens: <https://cgireland.org/>
- We are the ark, Mary Reynolds: <http://wearetheark.org/>
- Welsh transition town: <https://transitionbrogwaun.org.uk/>
- Vertical farming example: <http://www.urbanfarm.ie/belvedere-college-urban-farm.html>
- Biofuel management Ireland:
<https://www.dccae.gov.ie/documents/Energy%20White%20Paper%20-%20Dec%202015.pdf>
- Energia organic bio mass : <https://www.agriland.ie/farming-news/70000t-of-organic-waste-to-be-processed-at-energia-anaerobic-digester/>
- Landfill gas power plant/tourist attraction, Republic of Korea:
https://www.slc.or.kr/eng/index_eng.do
- Hemp Bio-plastics plant <https://www.teagasc.ie/media/website/publications/2019/Kaya-Presentation-Hemp.pdf>
- Hemp Inc. <https://www.globenewswire.com/news-release/2019/08/22/1905585/0/en/Hemp-Inc-Enters-Hemp-Bioplastic-Industry-to-Fill-Growing-Demand-for-Eco-Friendly-Materials.html>