

Plan B

For a resilient Catalonia in a post-growth scenario *Executive summary*



Translation to English of the executive summary of: [Pueyo, S. Pla B. Per una Catalunya resilient en un escenari postcreixement](#) (*Plan B. For a resilient Catalonia in a post-growth scenario*). This report was commissioned in 2024 by the *Generalitat de Catalunya* (Government of Catalonia), then headed by Pere Aragonès. It was carried out in CREAM and ICTA-UAB, within the REAL project. Views and opinions expressed do not necessarily reflect those of the *Generalitat* or of the institutions where it was produced, and they cannot be held responsible for them. The same holds for the EU and the European Research Council Executive Agency, which funds REAL.

First edition: June 2026

Author: Salvador Pueyo
E-mail: spueyo@riseup.net

Recommended citation: Pueyo, S. 2025. Plan B. For a resilient Catalonia in a post-growth scenario. CREAM and ICTA-UAB, Cerdanyola del Vallès (Barcelona).

© Salvador Pueyo. Creative Commons License, CC BY-NC-SA 4.0. Conditions in <https://creativecommons.org/licenses/by-nc-sa/4.0/>



The REAL project, of which this report makes part, is funded by the *synergy grant* no. 101071647, *European Research Council* (ERC-2022-SYG-REAL).

This is the translation to English of the executive summary of: [Pueyo, S. Pla B. Per una Catalunya resilient en un escenari postcreixement](#) (*Plan B. For a resilient Catalonia in a post-growth scenario*). CREAM, ICTA-UAB, REAL.

Executive Summary¹

- This document explores, at the level of Catalonia, policies to meet everyone's needs in a resilient manner without interfering with the Earth system in ways that would compromise the ability to continue meeting them. Traditional economic indicators such as GDP do not serve this objective, and being guided by them may be incompatible with it [sec. 1.1].
- Global-scale challenges will require coordination. Current geopolitics are unfavourable to this, but history shows the potential of people to coordinate when there are shared needs — and those shared needs are now greater than they appear. Catalonia can take a leadership role, and can already go very far without waiting for broader coordination [sec. 1.2].

1. Energy Production and Consumption

- The 1.5°C global warming limit is legally binding under the ICJ. At the current rate, the world — and, according to our calculations, Catalonia as well — will exhaust the corresponding CO₂ budget in 2028 [sec. 3.1.1–3.1.2]. It is no longer possible to respect this limit through fossil fuel emission reductions alone, but it is still achievable if ecosystems and food systems are also brought into play. One possible combination of these factors, in the case of Catalonia, would involve a 7% annual reduction in fossil fuel emissions starting in 2026, together with a moderation of animal-based food consumption towards around 25–30% of current levels — which is also more in line with health and tradition (part 2). Greater ambition on one of these two variables (fossil emissions or diet) would allow for less ambition on the other [sec. 3.1.3].
- This dual objective is also justified in terms of energy security [sec. 3.1.4] and food security [sec. 5.3]².
- At the level of final energy, economic growth in its current form in Catalonia translates into higher energy and fossil fuel consumption and a lower share of electrification [chap. 2]. Climate and energy security call for prioritising these latter variables, in a socially just way, regardless of the effect on growth.
- Renewable energies offer an indefinite supply at a rate determined by the surface area and materials assigned to them. To maintain current uses (including international aviation and shipping), we estimate that a land area of around 4.9% of Catalonia would be needed (15.3 times the area of the city of Barcelona), not counting rooftops and similar surfaces. With high efficiency and moderate changes in uses, this could perhaps be reduced to around half. Reducing consumption further is the way to further decrease this area. If consumption continued to grow, even more area would be needed [sec. 3.2].

¹ With few exceptions, the quantitative results mentioned in this summary are new contributions from the report.

² During the final editing phase of the report, the need to guarantee energy and food security became especially urgent due to the global consequences of the US and Israeli attack on Iran.

- To minimise the impact on ecosystems and agriculture, renewable energy can be deployed at the pace of near-term demand projections and in a sequence of locations ranked from least to most impact. This would allow time to reorient towards declining consumption trajectories and to take advantage of future opportunities to meet demand with less impact [sec. 3.3].
- For the time being, consumption that is already electric could be covered by replacing non-renewable sources with photovoltaic installations on built surfaces such as rooftops and on particularly degraded plots of land, if variability is ignored. To reduce variability, a certain amount of harder-to-site wind generation would probably be needed, even if variability is addressed primarily in other ways. For a rapid rollout on rooftops to actually take place, the Generalitat can take a proactive role (through the public energy company l'Energètica). If done over five years, the estimated annual investment would be equivalent to around 4.5% of the non-financial expenditure of the Generalitat and its dependent bodies. It would come from diverse sources and would be recovered [sec. 3.3.5].
- Transport is the main driver of growth in energy consumption in general and fossil consumption in particular in Catalonia [chap. 2, sec. 4.1], and generates many different types of impacts [chap. 4]. These are reasons to make a particular effort in this area during the transition, and not to limit action to prioritising one or another energy source [chap. 4].
- A range of measures are available to reduce car use and promote alternatives. For cases where this is most difficult, it would be useful to maintain subsidies for electric vehicles but redirecting them towards leasing services, car sharing, community cars, and facilitating access to these collective vehicles for those most in need of such support [sec. 4.2.2].
- Limiting aviation would, in principle, generate scarcity rents approximately equal to the avoided demand, which could be absorbed through appropriate taxes [sec. 4.4.3]. In this way, in addition to addressing a sustainability imperative [sec. 4.3], society would also benefit from this revenue [sec. 4.4.3], as well as from the resulting bottleneck for international tourism, which would help moderate housing prices [sec. 4.4.5].

2. The Agri-food System

- An agroecological transition would offer a great opportunity for the land, biodiversity, and small-scale farming [sec. 5.1]. Meeting current needs would require an agroecological intensification approach [sec. 5.3.3].
- The current Catalan agricultural system is focused on international supply chains. Much of the livestock industry acts as an intermediate step between imported crop production and exported meat [sec. 5.1.1]. Imported nutrients do not come back, which is a key reason why 51% of Catalonia's groundwater bodies are in poor chemical status. Reducing production would ease pressure on the territory and allow for the recovery of such a basic resource [sec. 5.1.2].
- In the case of the pork industry, we estimate that the consumption of the Catalan population corresponds to around 20% of what leaves slaughterhouses and 38% of what is raised in Catalonia [sec. 5.1.1].

- Even this portion, corresponding to local consumption, is at an unsustainable volume. Animal-based-food consumption habits changed radically in the twentieth century (in Spain as a whole, per capita consumption multiplied by 4, and total consumption by 10). The greatest leap took place during late Francoism, with the help of economic and advertising stimuli [sec. 5.1.1]. Applying such stimuli now in the opposite direction [sec. 5.3.4] would bring major benefits in many areas [sec. 5.1].
- We estimate that sustainable livestock farming that did not compete with human food production would yield less than 10% of the livestock products currently consumed in Catalonia [sec. 5.3.3]. Beyond this point, the crop production absorbed by livestock far exceeds the food it provides [sec. 5.1.1, 5.3.3]. This is the basis of multiple advantages of transitioning towards a more plant-based diet [sec. 5.1].
- The marine region of the eastern Iberian Peninsula is overexploited, having passed the point of maximum fishing yield as far back as 1983. Catalan fishing and aquaculture supply around 10% of current fish and seafood consumption in Catalonia, but we estimate that to be sustainable, output would need to be reduced by around half, while also prioritising artisanal fishing and the local co-management that part of the sector already practises. Imports also come from production that is overall unsustainable [sec. 5.2].
- Currently, Catalonia's self-provisioning capacity is minimal. If production were reoriented in this direction but consumption remained the same, sustainable self-provisioning would not reach 30%. A proportionally more plant-based diet would allow for greater self-provisioning, reaching a maximum with a reduction of over 90% in animal-based food consumption, leaving only the most sustainable forms of livestock farming and fishing. Even so, self-provisioning would not exceed around 80% (with zero losses and waste), but the closer to that point, the greater the resilience and the lower the impacts [sec. 5.3.3] (while it may be debated whether not reaching 100% is actually a problem [sec. 5.3.1]).
- Reducing the production and consumption of animal-based foods would have a positive global impact. We estimate the footprint of soya imports for Catalonia's livestock industry in the Amazon and the cerrado (South American tropical savanna) at a cultivated area of 2,900 km² and an annual deforestation of 27.5 km² (equivalent to one third of the Collserola Park). The global footprint of this industry is far greater [sec. 5.1.3]. The reason why a more plant-based diet may be the last opportunity to meet climate goals lies in the carbon that ecosystems such as these would reabsorb as they regenerate [sec. 3.1.3, 5.1.3–5.1.4]. It is also essential for reconciling food production and biodiversity at the global level [sec. 5.1, 5.3.2].
- Reducing the livestock industry would also serve to address major public health challenges, by slowing the evolution of bacterial resistance to antibiotics and of viruses with pandemic potential, and by moderating the burden of chronic diseases [sec. 5.1.6].
- An agroecological transition would align with a model based on small-scale farmers, and we take note of some of its demands [sec. 6.1]. An important item is land distribution. We observe that it has tended to become more concentrated, with a partial reversal following the real estate crisis of 2008 [sec. 6.2.1], which provides indications for economic instruments that could be used to redistribute it [sec. 6.2.2].

- Currently, it is not possible to close the nutrient cycle while also preventing a wide variety of pollutants present in sewage sludge from reaching soils and aquifers. Therefore, sustainable food production will require deep changes beyond the agri-food system itself, including in the chemical industry and other sectors [sec. 5.4].

3. Economic Policy and Governance

- The measures outlined so far would need to be accompanied by a general reorientation of economic policy. Greater potential would exist with monetary sovereignty and capital control power, which Catalonia lacks — as does the Spanish state. Nevertheless, there are many measures it can apply without these, if they are negotiated with the Spanish government in cases that exceed Catalonia’s authority. It could go further with coordination at larger scales, but we focus on measures that can already make headway without such coordination [sec. 7.1–7.2].
- This should also be accompanied by measures to minimize systemic risks (as in any period of transformation, whether deliberate or driven by circumstances) [sec. 7.2].
- In its financial activity, the Generalitat can prioritise ethical banking and incorporate its criteria. In the event of debt issuance, the potential for a model of in-kind interest consisting of access to non-free public services could be explored [sec. 7.3].
- As the main environmental taxation instrument, we have designed a new scheme we call *adaptive ecovouchers* (or *EVA*, which is the acronym in Catalan), which in principle resolves the shortcomings of other schemes (at the cost of some complexity) [sec. 8.2]. It consists of three elements [sec. 8.2]:
 - An environmental tax on consumption.
 - A complementary currency valid for paying the tax (also payable in euros). Periodically, new amounts would be issued and distributed among citizens, and the Generalitat would offer to buy back surpluses from the previous period with euros. The net result would be that above a certain level of impact one would pay, and below it one would receive payment (while at the same time raising awareness of the impact of each good or service, and without offshoring serving to avoid the tax).
 - Feedback mechanisms to periodically adjust rates so as to guarantee compliance with environmental objectives while also allowing citizens to influence them.
- This would be complemented by other environmental taxes — in this case on production, and also earmarked within the framework of the environmental objectives being pursued [sec. 8.1].
- In order to meet everyone's short-term needs without blind growth that threatens them in the long term, the distribution of resources is essential. Economically, redistribution poses two challenges in the scenario we are dealing with: how to increase the tax burden on those who have most without excessive capital flight, and how to use the revenue to meet needs without resulting into an excessive increase in private demand (*excessive* in terms of pressure on the

environment and of current account deficit; the current account is the trade balance plus some other items) [sec. 7.2].

- Even without capital controls, there is room to increase the tax burden on capital and the highest incomes. To begin with, the wealth tax includes unjustified exemptions that benefit large fortunes [sec. 8.3]. There is particular scope to tax monopolistic activities [sec. 8.3]. Presumably, however, the greatest potential would lie in a land value tax, since land is a form of capital that cannot be taken out of the country. Modulations would need to be introduced so that it does not become a burden for families currently living in an owner-occupied home who do not own other property [sec. 8.4]. Applying to Catalonia's cadastral values the rates proposed by Scornik Gernstein and Harrison for the Spanish state yields additional revenue equal to 30% of the non-financial expenditure of the Generalitat and its dependent bodies, though it remains to be studied in depth whether these rates are viable in Catalonia. Even assuming they are, actual revenue would in any case be lower, because land prices would fall as speculation disappears [sec. 8.4.2]. This outcome, however, is no less desirable than the revenue itself [sec. 8.4.4].
- A further benefit of this tax would be that it would favour compact urbanisation, thereby reducing pressure on land [sec. 8.4.3].
- Following J. Palomera, with a tax that reduced land and housing prices while also generating significant revenue, there would be a major opportunity to acquire property to expand the public rental stock and support housing cooperatives [sec. 8.4.4]. In our case, there would be a further price reduction thanks to the limits on aviation [sec. 4.4.5]. The basic need currently perceived as most problematic in Catalonia — housing — could thus be addressed.
- When it comes to redistribution, public services would be a priority. There is a widespread perception that they require more funding. They are important in our context because they allow resources to be directed towards meeting needs without increasing market purchasing power. The same effect can be achieved with shared goods, such as through libraries of things, which would be supported. Public services can also relieve pressure on unpaid care work [sec. 9.2].
- Nevertheless, it is also necessary to guarantee a minimum purchasing power for everyone. The issuance of *eves* would constitute a form of universal basic income (UBI), which would help but would be insufficient. We do not also propose a UBI in euros, because in existing quantitative proposals it would increase the market purchasing power of 80% of the population — something hardly compatible with reducing private demand and with expanding the funding of public services. To retain some of the advantages of a UBI without these drawbacks, we propose what we call a *cushion income*, which would also be received by everyone but would be modulated according to other income, following a certain formula. It would cover the needs of the lowest-income groups and reduce income fluctuations especially for lower-middle income groups (acting as a *cushion*) [sec. 9.4].
- As an alternative or complementary option to the cushion income, we studied a job guarantee. In a minimal version, we estimate the additional cost at 2.4% of the non-financial expenditure of the Generalitat and its dependent bodies, and that around 45% of those in sustained

employment deprivation would take it up. It would be rolled out gradually across the territory [sec. 9.6.3].

- Together with other forms of support, it would also be necessary to guarantee a job to people who lose their employment due to the ecosocial transition itself. This would be implemented with the participation of those affected and prioritising the public and cooperative sectors. However, in a just transition it is not enough to offer alternative income sources — issues of self-esteem and identity must also be addressed [sec. 9.6.4].
- While future labour needs are uncertain, we consider that a reduction in working hours would be timely at present. It would improve quality of life and promote a more equitable distribution of unpaid care work. It would also facilitate job creation without the need for growth, if accompanied by other measures [sec. 9.5].
- A complementary measure to study is moving from Social Security contributions that primarily tax the labour factor to others that tax the value added of companies (both labour and capital). In addition to removing a disincentive to hiring, this would reduce risks to the future financing of Social Security [sec. 9.6.1].
- The cooperative business model is particularly well suited to this transformation: (1) because, given the limits of redistribution, it carries out a predistribution; (2) because it offers greater job stability in a changing context (we provide data supporting this observation); and (3) because it democratizes the economy. The point in their lifecycle that prevents cooperatives from being more prevalent is their creation, and that is therefore where intervention is most needed [sec. 10.1].
- Community structures have the potential to manage shared resources (as an alternative to private goods) and to generate a social fabric with collective responsibility. The Generalitat can prioritise public–community partnerships over public–private ones [sec. 10.2].
- So-called *citizens' assemblies* (analogous to juries), if given binding character, offer a democratic means to decide policies in a way that is in principle little conditioned by short-term pressures [sec. 10.3].
- Tools such as the Common Good Balance Sheet (from the Economy for the Common Good) or the Social Balance (from the Solidarity Economy Network of Catalonia, XES) hold potential to reorienting values in the economic arena. The Generalitat can give them weight in public procurement and in various kinds of collaborations [sec. 10.3].
- In general, and especially in the face of technological and other transformations that move faster than institutions can respond to, it is vital that there is intrinsic motivation for the common good in those occupying decision-making positions. Several mechanisms to foster it have been identified, and more need to be researched. Government institutions can incorporate them and encourage their incorporation into the ethical balance sheets of businesses [sec. 10.3].

