Ireland's *Climate Action Plan 2019*
A social network analysis of a
policy implementation network

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September 2020

Executive summary

- The 2019 Climate Action Plan set out a new policy and governance approach to climate change in Ireland. We use social network analysis to analyse the set of relations among the actors involved in the Climate Action Plan as a policy implementation network.

- There are 109 actors or organisations named as being either responsible or co-responsible for at least one of the 183 actions detailed in the Climate Action Plan. The Department of Communications, Climate Action and Environment and the Sustainable Energy Authority of Ireland are the two most central actors in the network.

- The network has a low density and is highly centralized. Networks with this structure can be effective at meeting their objectives because actors are less likely to inefficiently use time, effort or resources to build and maintain redundant connections.

- National level actors are the most central actors in the network. Multi-level implementation of actions is not the norm. All policy areas addressed in the plan involve actors from more than one sector.

- We characterise the network as a *network administrative organisation network*, governed by the Department of the Taoiseach. The stable structure of this type of network makes it easier to manage the behaviour of network actors and to limit the extent to which they pursue their own interests.

- Consideration should be given to enhancing multi-level governance and cross-sectoral collaboration in the network to involve potentially relevant actors not currently included in the network. Particular attention should be paid to developing the policy implementation network for climate change adaptation policy.

Introduction

In June 2019, the Irish government published the *Climate Action Plan to Tackle Climate Breakdown* (DCCAE, 2019). It details how the state intends to meet the EU target of reducing greenhouse gas emissions by 30% by 2030 relative to 2005 levels, while also creating a resilient, vibrant and sustainable country.

The plan contains 183 actions within 13 different policy areas that extend to all sectors of Irish society and economy. For each action, the plan sets out the steps necessary for delivery, a timeline for delivery and the actor/s responsible for ensuring delivery. It is a cross-sectoral plan that includes measures across the sectors responsible for Ireland's greenhouse gas emissions. The plan takes a multi-level governance approach, including local, regional, national and international actors and details their roles in implementing the actions laid out in the plan.

The June 2020 Programme for Government committed to continue the CAP process by updating the plan annually and reporting progress quarterly, and it is anticipated that the Climate Action (Amendment) Bill will place this process on a statutory basis (Government of Ireland, 2020).

We use social network analysis to analyse the set of relations among the actors involved in the *Climate Action Plan* as a policy implementation network, and we identify recommendations for how this network can be strengthened in future iterations of the *Climate Action Plan*.

Constructing the *Climate Action Plan* implementation network

Social network analysis (SNA) is a set of methods for systematically identifying, mapping and measuring the connections between people, groups, or organisations (Hanneman and Riddle, 2005). Any of these entities can be the nodes in a network, while the connections between them can be any type of relationship or flow of resources. Using SNA methods, researchers can map and then examine the significance of the configuration of the ties among the actors in a network. This is achieved by calculating metrics for the structure of the whole network as well as for individual actors.

There are 109 actors or organisations named as being either responsible or co-responsible for at least one of the 183 actions detailed in the Climate Action Plan. Many of these actions require several steps to be taken in order to be delivered. In our analysis, we take it that a connection exists between any two actors if they are both named as being responsible for any step that is part of the same action. For example, there are three steps necessary for the delivery of Action 56 (All new buildings to be Near Zero Energy Building), and there are three different actors involved in at least one step of the action. Therefore, in our network, each of these three actors have a connection to one another.

Who is in the network?

We categorised each actor named in the plan according to the sector within which they primarily operate using the categorisations defined by the Irish State Administration Database (Hardiman, MacCarthaigh and Scott, 2020). Table 1 shows that the actors from just three sectors make up nearly two-thirds of the actors in the network: i) Enterprise and Economic Development, ii) General Public Services and iii) Education and Training. It is worth noting that only nine actors from the Environmental Protection sector are involved in the implementation of the plan. The network is dominated by actors that primarily operate at the national level (Table 2).

Table 1: Sectors of network actors

Sector	No. actors
Agriculture, Fisheries and Forestry	8
Education & Training	17
Enterprise & Economic Development	30
Environmental Protection	9
General Public Services	21
Health	1
Housing & Community Amenities	5
Public Order & Safety	4
Recreation, Culture, Religion	2
Science & Technology	3
Social Protection	3
Transport	7

Table 2: Governance level

Governance level of actor	No. actors
Local	11
Regional	10
National	84
International	4

Who are the most central actors?

Table 3 shows which actors are responsible for the implementation of the most actions in the plan. There is **only one non-national level actor** amongst the ten actors responsible for the most actions in the plan: the local authorities, which encompasses all 31 local councils in Ireland.

Table 3: Actors responsible for the most actions

Actor	No. actions	Sector	Level
Dept. of Comms., Climate Action & Env	110	Environmental Protection	National
Sustainable Energy Authority of Ireland	67	Environmental Protection	National
Dept. of Agriculture, Food & the Marine	44	Agriculture, Fisheries and Forestry	National
Dept. of Housing, Planning and Local Gov	43	Housing & Community Amenities	National
Teagasc	28	Agriculture, Fisheries & Forestry	National
Dept. of Transport, Tourism & Sport	25	Transport	National
Dept. of Business, Enterprise & Innovation	23	Enterprise & Economic Dev	National
Dept. of Public Expenditure & Reform	22	General Public Services	National
Local Authorities	21	General Public Services	Local
Commission for Regulation of Utilities	20	General Public Services	National

Network Structure

We calculated two structural properties of the network: network density and network centralization. Network density is the proportion of the potential connections in a network that are actual connections. A density of 0 means that none of the actors in a network is connected to any other another, whereas a density of 1 indicates that all the actors are connected to another. Network centralization is a measure of the extent to which the actors in a network have a connection or connections with a focal actor or a subset of actors. The more centralized a network, the more centred the actors are around the focal actor/s. Network centralization measures range from 0 to 1, where 0 means all actors have the same level of centrality and 1 indicates a maximally centralized network. The network formed by the Climate Action Plan has a **low density** (0.13) and is **highly centralized** (0.69). Networks with this structure can be effective at meeting their objectives because actors are less likely to inefficiently use time, effort or resources to build and maintain redundant connections. Figure 1 (see p.5 below) represents network graphically, illustrating actor centrality (size), sector (colour), and governance level (position on the y-axis).

Multi-Level Implementation

Figure 2 (see p.6 below) shows the governance level of the actors involved in the implementation of the actions outlined in each of the plan's thirteen policy areas (as delineated in the document's chapter structure). It shows that the network is **dominated by national level actors**. The *Agriculture, Forestry and Land Use* section of the plan is the only area where actors from all governance levels are involved. The actions in the *Citizen Engagement* section of the plan involves both the most local and the most regional actors, while the actions in the *Built Environment* section of the plan involve the most national level actors. There are three areas where only national level actors are involved: *Where We Stand*; *Governance of the Challenge*; and *International Action*.

Cross-sectoral Implementation

Figure 3 (see p.7 below) shows the 13 policy areas addressed in the plan and the sector of the actors involved in the implementation of the actions in each of the policy areas. Overall, the network is characterised by **significant sectoral diversity of actors** as well as significant **diversity in terms of the number of actors involved** across different policy areas. Actions related to the *Built Environment* involve actors from the greatest number of sectors – all sectors except Public Order and Safety. The *Built Environment* actions also involve the joint largest number of actors, alongside the *Citizen Engagement* policy area, which involves actors from eight different sectors. Four other policy areas involve actors from eight different sectors: *Adaptation; Agriculture, Forestry and Land Use*; *Carbon Pricing and Cross-cutting Policies*; and *Electricity*. Actions related to *Where We Stand* and to *Ireland's International Action on Climate Breakdown* involve the fewest number of actors, while actions related to *Where We Stand* and to the *Governance of the Challenge* involve actors from the fewest number of different sectors.

Figure 1: Ties between actors responsible for the same actions
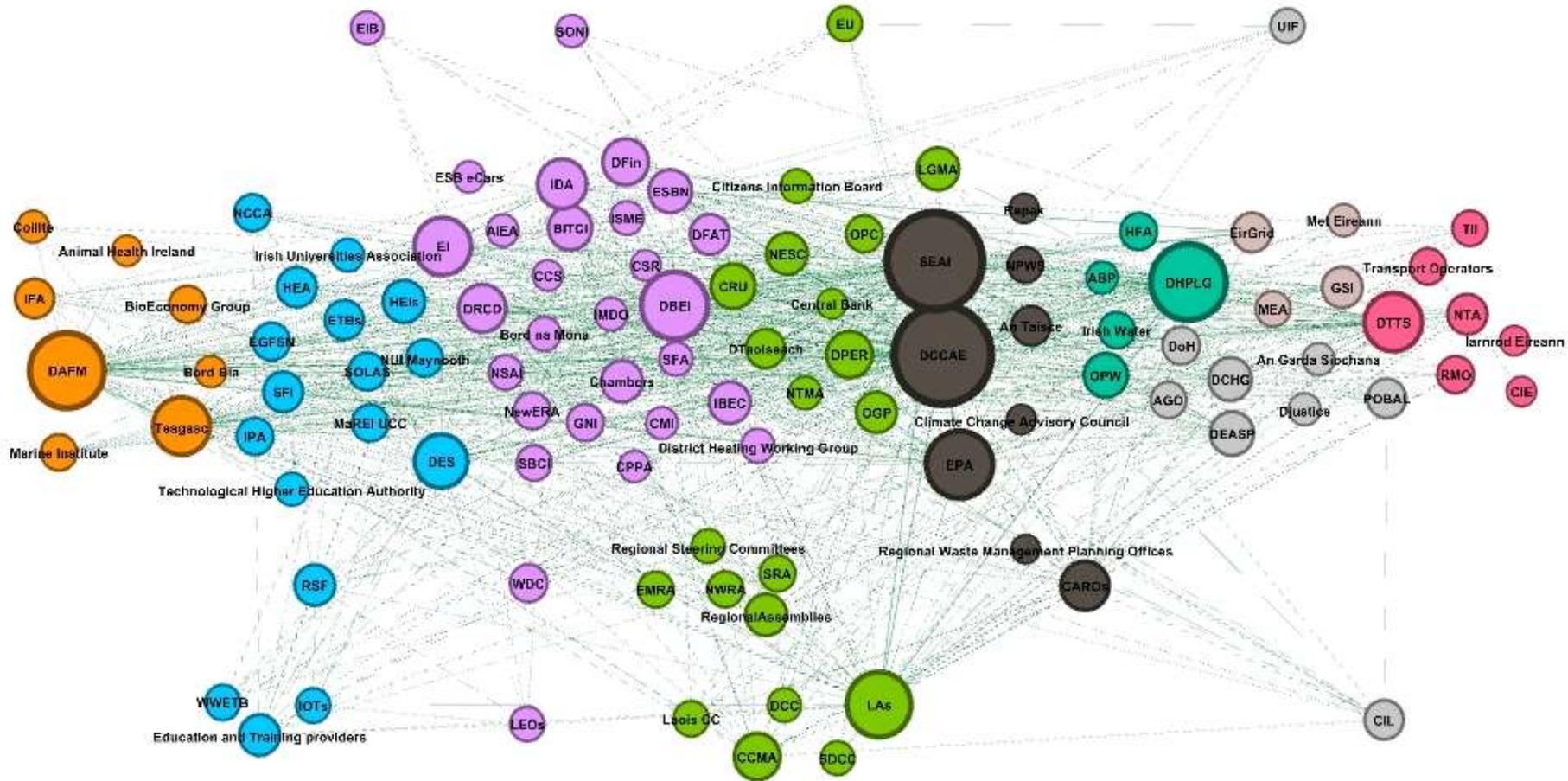
Notes: Larger nodes have more ties. International actors are placed at the top, then National level actors below them, then regional actors, and local actors at the bottom

Enterprise and Economic Development	(26.61%)
General Public Services	(19.27%)
Education and Training	(15.6%)
Environmental Protection	(8.26%)
Agriculture, Fisheries and Forestry	(7.34%)
Transport	(6.42%)
Housing and Community Amenities	(4.59%)
Science and Technology	(3.67%)
Public Order and Safety	(2.75%)
Social Protection	(2.75%)
Recreation, Culture, Religion	(1.83%)
Health	(0.92%)

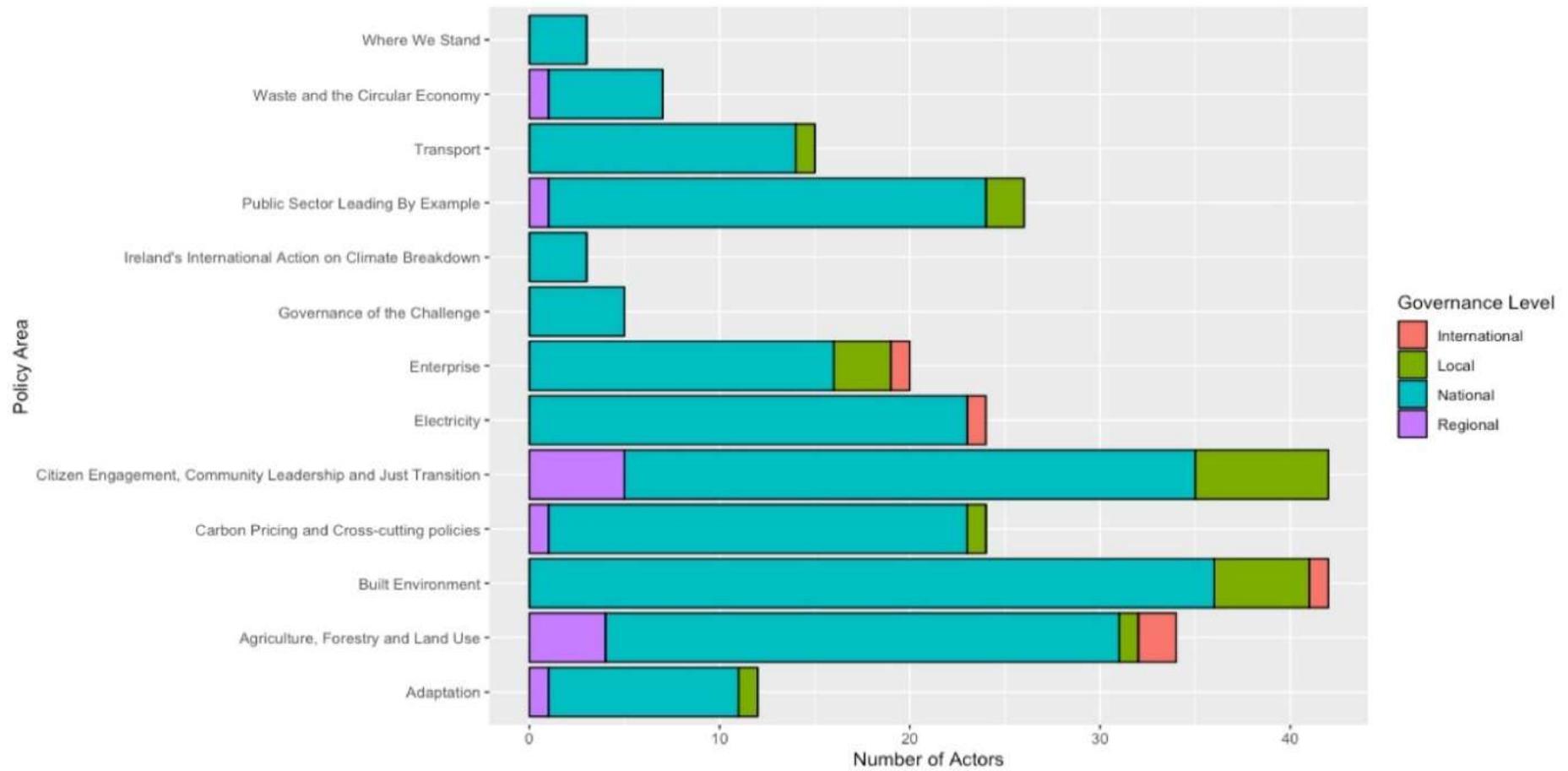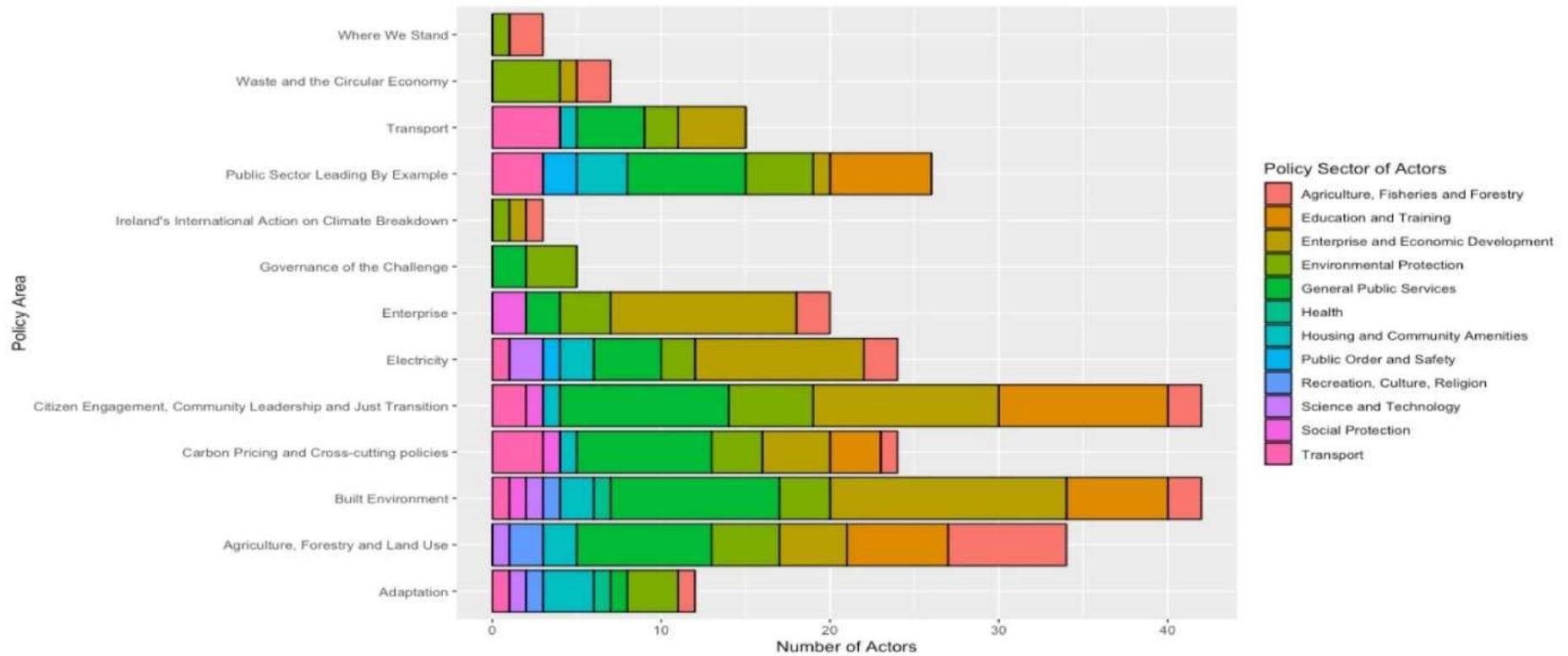Figure 2: Governance level of actors by policy area

Figure 3: Sectoral composition of actors by policy area

How is the network governed?

The Climate Action Plan establishes a new governance framework to ensure implementation, oversight and accountability to replace the existing framework. The plan establishes a Climate Action Delivery Board within the Department of the Taoiseach, co-chaired by the Secretary General to the Government (the most senior civil servant and head of the Department of the Taoiseach) and the Secretary General of the Department of Communications, Climate Action and Environment, to oversee the delivery of all the actions in the plan and to ensure that Government departments and public bodies are held accountable. A Climate Action Unit was established within the Department of the Taoiseach in summer 2019 in support of the Climate Action Delivery Board. This unit plays a central role in monitoring and driving implementation of the actions set out in the Climate Action Plan.

Provon and Kenis (2008) have identified three forms of network governance: the *shared governance model*; the *lead agency model*; and the *network administrative organisation (NAO) model*. In the *shared governance model*, the number of participating actors in a network is small and power is widely distributed, with all participating actors contributing relatively evenly to the management and steering of the network's activities. In the *lead agency model*, one actor is responsible for managing a network's activities. The level of consensus about the network's goals are moderate, with power concentrated in the hands of one key member. The NAO model is similar to the lead agency model, the main difference being that the NAO is not a key member the network it manages, but instead is a separate entity that exists to manage or oversee the activities of network actors.

The **policy implementation network established by the Climate Action Plan can be characterised as resembling an NAO model of network governance**, with the NAO role played by the Department of the Taoiseach.

Conclusions and Recommendations

The type of policy implementation network established by Climate Action Plan appears to be broadly fit for purpose. The stable structure of NAO-governed networks makes them the most effective for guiding the behaviour of network actors and for limiting the extent to which actors pursue their own interests, thereby improving the chances that it achieves its goals. These networks can effectively manage the tensions of internal/external legitimacy and efficiency/inclusiveness. In a network where the number of interactions among actors is low, such as that which is analysed here, the presence of an NAO can reduce opportunistic behaviour and combat apathy and fatigue through effective monitoring and coordinating of network actors.

Nonetheless, our analysis above has highlighted that the policy implementation network is dominated by actors at a single level of governance, namely the national level. In the

context of the need to substantially increase public engagement on climate change, consideration should be given to how having so few non-national level actors involved in the plan impacts on the ability to deliver such engagement. More broadly, further consideration should be given to how local government and other policy actors at local level can be integrated into the network across relevant policy sectors.

The revision of the Climate Action Plan should provide an opportunity to re-examine all of the actions in the plan to determine if there are any that could be more effectively implemented if actors from sectors not already involved in their implementation were brought on board. Some policy areas are characterised by far greater and more diverse sets of actors. This may be a function of inherent differences in the characteristics of different policy areas, but it may also reflect the omission of relevant actors in some sectors.

Further consideration ought to be given to the policy implementation network for adaptation to climate change in particular. The Climate Action Plan focuses predominantly on mitigation, with just one chapter focused on adaptation and only 3 out of 183 actions. With the expectation that the Climate Action (Amendment) Bill will place the Climate Action Plan process on a statutory footing, the treatment of adaptation policy within the climate governance framework needs to be clarified.

References

DCCAE, 2019. *Climate action plan to tackle climate breakdown*. Dublin: Department of Communications, Climate Action and Environment.

Hanneman, R.A. and Riddle, M., 2005. *Introduction to social network methods*. Riverside, CA: University of California, Riverside.

Hardiman, N., MacCarthaigh M., and Scott, C. 2020. The Irish state administration database. http://www.isad.ie.

Government of Ireland, 2020. *Programme for government: Our shared future*. https://www.finegael.ie/app/uploads/2020/06/ProgrammeforGovernment_Final_16.06.20-1.pdf.

Provan Keith G. Kenis Patrick N. 2008. Modes of network governance: Structure, management, and effectiveness. *Journal of Public Administration Research and Theory*, 18(2): 229–52.