



# Developing a national indicator for Scotland: Scotland's Contribution to International Development



**PUBLIC SERVICES AND GOVERNMENT**

# Developing a national indicator for Scotland: Scotland's Contribution to International Development

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Author: Cambridge Policy Consultants on behalf of the Scottish Government

**CPC** Cambridge Policy Consultants



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## List of acronyms

CDG	Center for Global Development
CDI	Commitment to Development Index
CPC	Cambridge Policy Consultants
DAC	Development Assistance Committee
EU	European Union
FAO	Food and Agriculture Organization
FPA	United Nations Population Fund
GCRF	Grand Challenges Research Fund
GNI	Gross National Income
HDI	United Nations Development Programme Human Development Index
LCREE	Low Carbon and Renewable Energy Economy
LDC	Least developed countries
MFN	Most-favoured-nation
MIPEX	Migrant Integration Policy Index
NPF	National Performance Framework
ODA	Official Development Assistance
OECD	Organisation for Economic Co-operation and Development
PCD/ PCSD	Policy Coherence for (Sustainable) Development
PCDI	Policy Coherence for Development Index
UN	United Nations
UNDP	United Nations Development Programme
UNHCR	United Nations High Commissioner for Refugees

# Summary

## Background

1. The objective of this assignment is to develop a methodology for the calculation of the national indicator *Contribution of development support to other nations* that forms part of Scotland's National Performance Framework (NPF). In addition, the indicator should be:

- A measure for Scotland, not just the Scottish Government that will be durable and capture the full range of activities.
- Mainly focused on those policy areas where Scotland has devolved responsibility in particular: equalities, climate change, health, education and justice.
- Based on transparent and international data sources that can be measured and updated in a timely fashion, so that Scotland's progress can be assessed.
- Be able to track Scotland's performance over time and not be dependent on comparative measures.

2. A key part of the project is to review existing approaches to measuring the contribution to international development. The Scottish Government had already engaged with the Center for Global Development (CDG) on the Commitment to Development Index (CDI). Cambridge Policy Consultants (CPC) reviewed the wider literature on the impact of Policy Coherence for (Sustainable) Development (PCD/PCSD) on international development.

3. Discussions with the Scottish Government identified five policy areas that currently make or are expected to make a distinct Scottish contribution to the development support to other nations:

- Adoption and implementation of *Equalities* legislation into policy practice;
- *Climate Change* including policy action to deliver net-zero carbon Scotland, knowhow on renewable technology and just transition support;
- *Health* in terms of health services and the determinants of health;
- *Education* through providing access to students from other nations and academic partnerships with further and higher education sectors in other nations;
- *Justice* including training and technical advice and other legal support.

## Review of approaches to measuring the wider impact of international development support

### *Commitment to Development Index*

4. The long-standing benchmark CDI was reviewed for its suitability as the NPF indicator. The CDI is a composite index constructed from seven components covering a range of policy areas – Aid, Finance, Technology, Environment, Trade, Security and Migration. Key findings were:

- The majority of CDI measures cover policy areas that are currently reserved to the UK government and would therefore not reflect Scottish policy choices.
- Of the five policy areas selected to explore indicators for Scotland's contribution to international development, CDI indicators provide coverage of just the Climate Change theme.
- The methodology of CDI is based on cross-country comparisons and for the purpose of the NPF indicator would not provide a consistent measure of progress over time<sup>1</sup>.

5. Nevertheless, there are a number of individual indicators used in the CDI that are relevant to developing an NPF indicator for Scotland covering access to higher education, trade, agricultural subsidies, low carbon economy and arms sales.

### *Policy Coherence for Development Index*

6. The concept of Policy Coherence for Development (PCD) originally emerged in the early 1990s from the realisation that non-aid policies of donors affect developing countries and should not distract but rather be supportive of international development goals. A number of measurement frameworks have been proposed with the principal being PCDI. The PCDI is an index that adopts a similar method to CDI, standardises the degree of change across variables and weights their influence before combining them for an overall score.

7. PCDI uses 49 indicators that have been analysed with data for 133 countries and have been organised into 31 indicators that promote policy coherence and 18 indicators that are contrary to sustainable development processes. Key considerations are:

- Although a number of the measures are closer to the policy domains, some are based on ordinal values or policy assessments and so either cannot be quantified or would require significant effort to update each year.

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<sup>1</sup> The details are set out in Section 2 and Annex B.

- More so than CDI, PCDI is reliant on cross-country comparisons in benchmarking and aggregating indicators into an overall index. This would impact on the robustness of the NPF indicator over time.
- The weighting of different indicators is not transparent between different policy areas and so unlikely to fit with Scotland's policy approach.
- As with CDI, even if the overall structure of PCDI does not fit with the design criteria for NPF indicator, a number of individual variables may be relevant to developing an NPF indicator for Scotland.

8. Therefore, while neither the CDI nor the PCDI approach is directly replicable for the NPF indicator, the review identified a number of variables for consideration as indicator components.

### **Rationale and variable selection for the NPF indicator**

9. The NPF is intended to provide a benchmark of progress on National Outcomes for Scotland. We recommend that the NPF indicator adopts existing policy concepts wherever possible and that it builds on the Beyond Aid agenda in Scotland. As this is still under development we have considered how policy coherence sits with the existing strategic objectives set for Scotland's International Framework.

10. This NPF indicator aims to draw together:

- Scotland's reputation for developing durable and positive partnerships;
- Scotland's international best practice in environmental, equalities and rule of law standards;
- The policy areas where Scotland is pre-eminent, i.e. health, education, environment, justice, equalities in a manner that links how these relate to policy coherence and more effective development support to other nations.

11. It will be important that in future there is explicit reference to Scotland's emerging Beyond Aid agenda but it also the existing International Framework<sup>2</sup> objectives. Table 1 links Scotland's ambitions we identified with a rationale and the International Framework objectives:

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<sup>2</sup> International Framework (2017) <https://www.gov.scot/publications/scotlands-international-framework-9781788514033/pages/2/>



Table 1: Ambitions and rationale

Scottish Values <sup>3</sup>	Rationale	International Framework Strategic Objectives
We are good global citizens	Our economic, educational, cultural and heritage strengths are globally recognised, supporting our positive international reputation	<i>Relationships &amp; Partnerships</i> : Strengthen our external relationships, roles and networks
We avoid harm to the development of other nations	In order to provide credible support to other nations we need to ensure that we follow international best practice standards	<i>Reputation and Attractiveness</i> : Build our reputation and international attractiveness
We support development in other nations	Promote knowledge exchange through sharing the experience and expertise of our public, private and community sectors	<i>Global Outlook</i> : Enhance our global outlook to set the domestic conditions for success

12. The process to populate this framework with specific measurable indicators involves two stages:

- *Conceptual*: an assessment of which measures represent improved policy coherence for each element of the framework. This process adopted two stages itself:
  - *Firstly*, adoption of CDI or PCDI indicators for the relevant devolved policy area.
  - *Secondly*, the use of indicators suggested in the wider literature and stakeholder discussions to cover those policy areas that are not covered by CDI/PCDI frameworks
- *Practical*: What are the practical steps necessary to populate these measures with robust data, updated on a regular basis at reasonable cost.

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<sup>3</sup> These three Scottish values are based on the author's own interpretation and are based on Scottish Government publications and discussions with stakeholders.

Table 2: What Scottish values identified mean for contribution of development support to other nations

Scottish Values	What this means for contribution of development support to other nations	Linked National Outcome (NPF)
<b>We are good global citizens</b>	We work with partners to build capacity and engage in dialogue on development and human rights	Education, Economy & Human Rights
	We support migrant and asylum seeker populations coming to Scotland	Human Rights
	We welcome students from developing countries to our educational institutions	Children and Young People
<b>We avoid harm to the development of other nations</b>	We avoid contributing to climate change and environmental damage internationally	Environment
	We trade and invest fairly	Economy
<b>We support development in other nations</b>	We promote equality and human rights	Human Rights
	We promote knowledge exchange and share the experience and expertise of our public, private and community sectors	Education
	We work to improve health outcomes	Health
	We advocate trade to support development	Economy
	We support fairness under the law	Justice

13. This process produced a list of potential indicator components that were reviewed through internal discussions with Scottish Government including a workshop with policy officers and a workshop with external stakeholders.

14. The process excluded measures from the long list on the grounds that it is not possible to access robust data on a regular basis. In a minority of cases a single indicator could not be identified that would adequately represent the measure and reliably represent progress for Scotland.

Table 3: Proposed indicator components against identified Scottish values

Scottish Values	What this means for contribution to development of other nations	Proposed Indicator
<b>We are good global citizens</b>	<p>We work with partners to build capacity and engage in dialogue on development and human rights</p> <p>We support migrant and asylum seeker populations coming to Scotland</p> <p>We welcome students from developing countries to our educational institutions</p>	<ul style="list-style-type: none"> <li>• Scotland's connectedness to ODA recipient countries<sup>4</sup></li> <li>• Asylum seekers settled in Scotland per 100,000 population</li> <li>• HE Students from DAC Least Developed Countries / Total Non-EU Students</li> </ul>
<b>We avoid harm to the development of other nations</b>	<p>We avoid contributing to climate change and environmental damage internationally</p> <p>We trade and invest fairly</p>	<ul style="list-style-type: none"> <li>• % of total waste treated in Scotland</li> <li>• Value of the Low Carbon and Renewable Energy Economy (LCREE) in Scotland</li> <li>• Value of Agricultural subsidies</li> </ul>
<b>We support development in other nations</b>	<p>We promote equality and human rights</p> <p>We promote knowledge exchange and share the experience and expertise of our public, private and community sectors</p> <p>We value trade to support development</p>	<ul style="list-style-type: none"> <li>• % of international development funding devoted to vulnerable groups</li> <li>• Value of R&amp;D contracts in HEIs in partnership with ODA-eligible nations</li> <li>• Value of goods imports from least developed ODA countries</li> </ul>

### Calculating a composite indicator for the NPF

15. The ultimate objective of this assignment has been to identify a number of relevant indicators that together provide a practical measure of Scotland's contribution to the development of other nations. For the purpose of NPF, this measure needs to be a single composite index. The final stage of this project was to aggregate the indicator components into a single indicator, using international best practice.

<sup>4</sup> This proposed indicator component is not further included in the report and the proposed indicator calculations, because its data was not yet available. This variable will be drawn from the newly designed NPF indicator 'International networks' that is currently under review.

16. The combination of indicator components raises several questions:

- How can each measure be standardised so that they are on an equivalent basis? This is done through expressing the indicator in proportionate terms or with reference to the range of values (for example with reference to minimum and maximum values measured across all comparator countries).
- How to deal with any missing values?
- Should the different elements of indicators and sub-components be weighted differently? Both CDI and PCDI employ a degree of expert judgement in applying weights. Thus, while the weight values are apparent, the reasoning behind them is not.

17. The design criteria ruled out the use of comparators, and it follows that in combining the indicators for Scotland:

- There are no missing values in the selected indicator components as the availability of regular updates is one of the selection criteria.
- The most straightforward approach is that the NPF indicator measures year-on-year change in the underlying indicators as a measure of progress.
- At this stage, there is no objective basis to applying weights to the values of the individual indicators. So, the indicators are combined without weights.
- We use a geometric mean to combine the indicator components into the NPF indicator. This is the approach adopted by UNDP's Human Development Index (HDI) as mathematically it reduces the impact of significant variation in one of the indicator components dominating the score of the composite indicator.

### **Populating the NPF indicator with data**

18. Annual data has been sourced for the proposed indicator components for the period 2014-2017. Indices have been calculated for each indicator component with a baseline value (=100) in 2017. The index value for the other years is then set as a proportion of this baseline value. For all but one indicator component, a larger value represents a larger positive impact on policy coherence. For one indicator component, the value of agricultural subsidies, an inverse of the index is used so that a larger value (that is considered to have a detrimental impact on policy coherence) is transposed into a lower index.

19. These indicator components are then combined for each year into an overall composite indicator. The values are the geometric mean of the

indicator components. Table 4 below lists the index value for each year since 2014.

Table 4: NPF indicator scores 2014-2016 against baseline year 2017

	2014	2015	2016	2017
Indicator score for Scotland's Contribution Development support to other nations	75.2	84.4	77.5	100.0

20. On the basis that the 2017 indicator is set to the baseline of 100 this means observed changes in the index should be reported accordingly:

Table 5: Threshold for change

Value of Index in 2018	Measure of change
greater than 105	Improving index value
95 to 105	Maintaining index value
Less than 95	Worsening index value

### Potential changes in the NPF indicator in future

21. The literature on how policy coherence leads to sustainable development is broad but often imprecise. Further research and evaluations could offer a new source of potential indicators to be included in the indicator in the future. This implies that the Scottish Government should keep this NPF indicator under review and seek to update and amend the individual indicator components periodically as necessary. There would appear to be a number of areas where this may be worthwhile in future:

- Include more policy areas if and when these are devolved to Scotland.
- Seek to include wider measures of partnership working and the contributions of Scottish expertise that is not captured in simple input measures. While they have proved intractable to a low-cost data collation process, new data sources may become available in the future that could address this gap.
- A more specific gap that may be filled by Scottish Government itself is the reporting on partnership activity associated with the International Framework Strategy. At present, no data is collected on the spend on partnerships at this level but this may also change in future.



# 1. Introduction

1.1. The objective of this assignment is to develop a methodology for the calculation of the national indicator *Contribution of development support to other nations* that forms part of Scotland's National Performance Framework (NPF).

1.2. The NPF was refreshed in 2018 and contains a new National Outcome '**We are open, connected and make a positive contribution internationally**'. The *Contribution of development support to other nations* will be one of a suite of six indicators that will measure Scotland's progress against this outcome.

1.3. The NPF uses indicators to measure Scotland's progress against the national outcomes. These indicators provide a measure of national wellbeing. They include a range of economic, social and environmental variables.

1.4. In addition, an NPF indicator should be:

- A measure for Scotland, not just the Scottish Government;
- Mainly focused on those policy areas where Scotland has devolved responsibility<sup>5</sup>;
- Based on a transparent and international data sources that can be updated in a timely fashion;
- Not be dependent on comparisons with other countries;
- Be consistent over time so that Scotland's progress can be assessed.

1.5. Discussions with Scottish Government also highlighted that the nature of current international development practice may evolve in future and so the indicator(s) should be designed with this in mind and a potential lifespan of up to ten years. In particular, Scotland is currently developing a 'beyond aid' strategy that should be considered in developing the NPF indicators.

1.6. The focus of these proposed indicators is Scotland and the characteristics that make its contribution to international development unique.

1.7. This assignment has followed a mixed-methods approach, combining discussions with a range of stakeholders and experts with analysis of available research papers and datasets.

- A workshop with the Scottish Government International Development policy team;

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<sup>5</sup> see Annex 1 for a list of devolved and reserved policy areas

- A workshop with the Center for Global Development relating to their Commitment to Development Index;
- Telephone discussions with stakeholders in a range of organisations supporting international development activity from the education, health and justice sectors;
- Presentation of outline proposals for the structure and example indicators to Scottish Government policy officers and external stakeholders at two workshops to test options and draw on their expertise to identify variables.

1.8. The main body of this report summarises our findings and the rationale for the design of the proposed indicator components for the NPF composite indicator. More detailed analyses are included in the annexes.



## 2. Review of International Measurement Approaches

### 2.1. Introduction

2.1.1. The starting point for the assignment was to explore the range of policy areas that underpin Scotland's contribution of development support to other nations. This involved initial discussions with Scottish Government international Development policy team on:

- Which Scottish policy areas make a difference to Scotland's commitment to development?
- How such domestic policies and practice influence international development?
- What performance measures might be in scope to best represent this process at a national level?

2.1.2. Scottish Government analysts had already undertaken a preliminary assessment of the Center for Global Development's (CGD) Contribution to Development Index (CDI). The team reviewed both CDI literature and literature relating to the wider policy coherence for development in order to consider:

- Which policy areas make a difference to Scotland's commitment to development?
- How have these been measured in the international literature?
- What lessons can Scotland learn from this experience and how well does it apply to the current devolved policy position?
- What are potential indicators for Scotland and their data sources?

#### **Setting key design parameters – what should the indicator components cover?**

2.1.3. The discussions with Scottish Government identified five key policy areas that currently make or are expected to make in future, a distinct Scottish contribution to the development support to other nations. These are:

- Adoption and implementation of *Equalities* legislation into policy practice across protected rights groups on legal rights and anti-discrimination regulation alongside rights of access to services and support.
- *Climate change* including policy action to deliver net-zero carbon Scotland, knowhow on renewable technology and just transition support to alleviate the potential downside on the economy and society of implementing net zero policy.

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- *Health* in terms of health services and the determinants of health (e.g. water management and sanitation, etc.). Scottish NHS and other support to other nations through staff volunteering, technical assistance and partnerships, hosting of medical staff from other nations to develop skills and medical practice.
  - *Education* through providing access to students from other nations to come and study at Scottish Universities and colleges. This may also include academic partnerships with further and higher education sectors in other nations based on the strong reputation of Scotland's academic and educational administrative expertise
  - *Justice* to include Police Scotland's support to other nations through training and technical advice and potentially other legal support and training for other nations' judiciary etc.

2.1.4. While discussions considered a broader range of policies and the potential inclusion of possible policy areas that may inhibit the contribution to development, it was agreed that the literature for measuring policy impacts would prioritise these five policy areas. However, the review of existing methods would also consider the inclusion of others that may be suggested in the literature – for example, policy action to deliver inclusive growth, where these conform to the design criteria (primarily a devolved policy responsibility).

2.1.5. The review of existing literature covered two areas:

- Scottish Government has already had initial discussions with the Center for Global Development (CGD) relating to their Commitment to Development Index (CDI) which is a primary indicator of the scale and quality of a country's contribution to international development and an obvious starting point for this review.

The literature relating to the measurement of the impact of policy coherence on international development.

2.1.6. Both these performance measurement frameworks have been reviewed by this research. The review considered how different indicators might reflect that Scotland's contribution to other nations may arise through:

- Indicator definitions that are relevant for Scotland by being both:
  - a measure of a devolved policy responsibility and
  - reflective of the contribution Scotland makes to the development of other countries
- Accessibility of data sources that can be updated efficiently on a regular basis.

2.1.7. The next section reviews the relevance of the CDI and its constituent parts in providing relevant indicators for the above. The subsequent section similarly reviews the broader policy coherence for development (PCD)

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literature for indicator components that may better fit with Scotland's devolved policy interests.

## **2.2. Review of the Commitment to Development Index (CDI)**

2.2.1. It should be stressed at the outset that this review exclusively assesses the extent to which the long-standing benchmark Commitment to Development Index (or a subset of indicators) might be adopted as an indicator of Scotland's contribution to international development.

2.2.2. The CDI is a composite index constructed from seven components covering a range of policy areas – Aid, Finance, Technology, Environment, Trade, Security and Migration. Each component is made up of sub-components and the sub-components are in turn a composite of individual indicators. A full list of CDI variables is included in Annex B.

2.2.3. Prima facie, the CDI offers a number of features that would suit the NPF indicator:

- It covers a broad range of policies in place in the donor country with the aim of assessing their contribution to development (and so would be a measure of the whole of Scotland);
- It is a long-standing international methodology, established in 2003 and has been updated regularly since with some revisions to the methodology meaning that not all years are directly comparable;
- It is based on publicly available international data sources.

2.2.4. While it is clearly possible to track the change in the CDI over time, the real strength of the CDI measure is that it applies a consistent methodology to the international development activities of a number of countries. This allows to assess their contributions comparatively.

2.2.5. However, there are a number of areas where the CDI would be less suitable for NPF in Scotland:

- The majority of measures cover policy areas that are currently reserved to the UK government and so the index mostly measures the situation for the UK and not Scotland. Devolved policy areas are often contained in categories where reserved powers dominate and it is not possible to subdivide the weighting but even when all these areas are included the weighting of devolved policies is 38%.
- The evidence base on which the weights for different policy areas are based has often been challenged in the literature and is in part based on the judgement of researchers at CGD. The question for this

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assignment is not whether they are technically justified but whether they fit with Scotland's priorities for international development<sup>6</sup>.

- The raw values of CDI's variables are on different scales. This makes standardising the values necessary to enable comparison across variables, and calculations of performance and ranking need to be standardised before they are combined. This is vital to ensure the stability of the index and that highly variable measures do not dominate. However, it adds a layer of complexity and means the index is much less transparent.
- Of the five policy areas we recommend to explore for indicator components for Scotland's contribution to international development, CDI indicators provide coverage of just the Climate Change theme (see Annex B for more details).

2.2.6. Subsequent discussions with the CGD team on the key features of the CDI highlighted that the reasons behind many of these 'gaps' in the index related to:

- A lack of comparable data across the G20 countries that the CDI covers
- The challenge of selecting a single quantitative indicator or even a basket of indicators that would adequately represent some of these policy domains for each country.

### **Overall conclusions on relevance of CDI to Scotland**

2.2.7. It is clear that while the CDI provides an important benchmark of individual country's commitment to development, this does not apply when the country in question does not have full policy discretion. More significantly, the CDI measures are specifically designed to be 'near market' indicators of the key factors that influence the effectiveness of international development spend. While this may be relevant to Scotland in future, the current policy focus is on the beyond aid agenda of policy coherence. CDI has limited coverage of these policy areas that are central to Scotland's contribution to the development of other nations.

2.2.8. This does not mean that individual measures within CDI have no relevance for Scotland and where possible we have included them in the suggested measures as they are based on available data sources. The following indicators were identified as being potentially relevant:

- Greenhouse gas emissions
- Value of agricultural subsidies

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<sup>6</sup> See King and Matthews (2012) Policy Coherence for Development: Indicators for Ireland, Institute for International Integration Studies, Trinity College, Dublin, January 2012, for a full analysis of the criteria for the development of indicators and the role of weighting in the assessment process.

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- Value of arms sales
  - Assessment of the integration policies for migrants (MIPEx)
  - Scotland's share of asylum seekers
  - Students from ODA-Receiving Countries on Higher Education courses in Scotland/ Total Tertiary Students

2.2.9. It is also apparent that the calculation of an index from a range of variables raises a number of questions that may not suit the NPF:

- Firstly, that changes in the value of a variable need to be standardised if they are to be combined so that significant swings in one indicator do not dominate other variables that are may change more gradually. This can be a complex process that means final index values are less transparent.
- Secondly, the individual variables need to be combined in some way. CGD recognise that this is dependent on expertise and judgement and gives rise to more challenge than the choice of individual variables.

## 2.3. Review of Policy Coherence Measures

### Introduction

2.3.1. The concept of Policy Coherence for Development (PCD) originally emerged in the early 1990s from the realisation that non-aid policies of donors affect developing countries and should not distract but rather be supportive of international development goals. The PCD concept initially emphasised the responsibility of developed countries to consider the effect on developing countries when formulating domestic policies across different sectors (trade, finance, migration, security, technology, science).

2.3.2. The literature on Policy Coherence for Development (PCD) and, more recently, Policy Coherence for Sustainable Development (PCSD) is extensive with the earliest references back to 2005 being developed by the OECD and European Commission among other institutions. PCD is an approach and policy tool for integrating the economic, social, environmental and governance dimensions of sustainable development at all stages of domestic and international policy making. It is the aim of PCD to make foreign relations to be as ecologically, economically and socially coherent as possible and thereby to make international co-operation for international development more effective<sup>7</sup>. Full details are included in Annex C.

2.3.3. PCD has been discussed in relation to the concept of Global Public Goods (GPGs). GPGs are in principle available to everyone and each country has an interest in contributing to their promotion. Examples might include a

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<sup>7</sup> Swiss Agency for Development and Cooperation, Policy Coherence (<https://www.eda.admin.ch/deza/en/home/results-impact/policy-coherence.html>)

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fair, robust and market- orientated trading system for goods and services or climate stability. A range of policy areas have been included in the PCD literature, however, the European Commission in collaboration with the Member States, identifies five broad PCD priority areas: (i) trade and finance, (ii) climate change, (iii) food security, (iv) migration and (v) security. Others have also included health, education and equalities.

### **Review of PCD/PCSD measurement frameworks**

2.3.4. There are a number of PCD/PCSD frameworks. In general these focus on the policy procedures in place to ensure policy coherence for development. However, the vast majority do not specify performance variables or indicators that will assess a country's progress and impact in implementing PCD/PCSD. We found two studies that specified indicators that may be of interest: King and Matthews (2012)<sup>8</sup> and Knoll (2014)<sup>9</sup>.

2.3.5. King and Matthews (2012) identify the challenges that can arise by a lack of precision in measure definition, for example measures have no defined scale and cannot be quantified. These criticisms are repeated by ECDPM (2015) who find that across the EU Member States reviewed '*different logical frameworks mix up objectives, targets, actions and indicators.*'<sup>10</sup>

2.3.6. King and Matthews (2012) propose 53 indicators across eight policy domains: Trade, Agriculture, Fisheries, Migration, Environment, Finance and Enterprise, Security, and Development Aid that reflect the components used in the CDI. In the Scottish context, most of these policy areas are reserved to the UK Government. In addition, while these indicators provide a basket of measures across these policy areas, many were drawn from specific studies rather than official statistics and so may not be repeatable or updated on a regular basis.

2.3.7. Knoll (2014) reviews 20 different policy domains through four different dimensions: Environment, Economic, Social and Political and grouped them together in five components based on their similarities and to provide a categorisation that was more accessible to decision-makers.<sup>11</sup>

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<sup>8</sup> King and Matthews (2012) Policy Coherence for Development: Indicators for Ireland, Institute for International Integration Studies, Trinity College, Dublin, January 2012

<sup>9</sup> Knoll, A. 2014. Bringing Policy Coherence for Development into the Post-2015 Agenda – Challenges and Prospects. ECDPM Discussion Paper 163. Maastricht: ECDPM

<sup>10</sup> ECDPM Discussion paper 171, Use of PCD indicators by a selection of EU Member States, Jan 2015, p7

<sup>11</sup> Knoll A op cit.

Table 2.1: Dimensions and policy domains in Knoll (2014)

<b>Dimensions</b>	<b>Policy domains</b>
Economic Component	Fiscal Financial
Social Component	Education Health Social Protection Equality Employment Science & technology
Global Component	Peace & security Co-operation Justice & human rights Human mobility & migration
Environmental Component	Energy Biodiversity Fisheries Rural & agricultural development
Production Component	Industry Infrastructure & transport Tourism Urban Planning

Source: Knoll (2014) Reported in PCDI Report Chapter 4 p129.<sup>12</sup>

2.3.8. For the Policy Coherence for Development Index (PCDI), indicators were selected for each element of the matrix based on data from 234 countries and an initial set of 201 indicators. The removal of missing data reduced the dataset to 133 countries and 133 variables. These were then further reviewed using factor analysis to produce a list of 49 variables for 133 countries. These were organised into 31 indicators that promote policy coherence and 18 indicators that are contrary to sustainable development processes. The PCDI is an index and in a similar method to CDI, standardises the degree of change across variables and weights their influence before

<sup>12</sup> 2016 PCDI Report: Another Way to Grow, Chapter 4 p129.  
<https://www.icpds.info/wp-content/uploads/2016/04/2016-PCDI-Report.pdf>

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combining them for an overall score. Further detail on the PCDI's variable selection process can be found in Annex C.

2.3.9. A number of the 49 indicators can be mapped to Scotland's five key policy areas that were identified as relevant for Scotland's *Contribution of development support to other nations*: The full mapping is provided in Annex C but in summary the mapped variables comprise:

- Climate change
- Equality
- Education
- Determinants of health
- Justice

2.3.10. The PCDI framework suggests that rather than present standalone policy areas, establishing a logical framework for these actions makes them more accessible to a wider audience and provides a clear association between policy action in Scotland and an improved contribution to the development of other nations. How this can be done for Scotland is addressed in the next section.



## **3. Establishing an Indicator for Scotland's Contribution of Development Support to Other Nations**

### **3.1. An approach for Scotland's Contribution of the development support to other nations**

3.1.1. The next stage of the project was to develop an approach that places the five broad policy areas into the context of how Scottish public life (not just Scottish Government policy, but also the public, partnerships and institutional practice) will contribute support to the development of other nations.

3.1.2. This stage is essential in order to clearly establish a logic chain between Scotland's wider ambitions and areas of activity that will contribute to the Beyond Aid agenda in Scotland. This would also provide a mechanism to consider which variables are most appropriate to represent these contributions in the National Performance Framework and summarise what might otherwise be a very wide range of concepts into a more manageable set. Ultimately, all variables are combined in a composite indicator.

3.1.3. While the NPF is intended to provide a benchmark of progress for Scotland, we think that it is important the framework adopt existing policy concepts wherever possible. We have considered how policy coherence sits with the existing strategic objectives set for Scotland's International Framework.

3.1.4. The framework aims to draw together:

- Scotland's reputation for developing durable and positive partnerships;
- Scotland's international best practice in environmental, equalities and rule of law standards;
- The principal policy areas where Scotland is pre-eminent – health, education, environment, justice, equalities but in a manner that links how these relate to better policy coherence and ultimately more effective support to other nations;
- Other areas where policy coherence is seen as vital in order to provide a more effective contribution to the development of other nations and for which Scotland has devolved responsibility. The manner in which both CDI and PCDI map domestic policy coherence to development support

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and the literature from the OECD and EU were particularly important here.<sup>13</sup>

3.1.5. The process to populate this framework with specific measurable indicators involves two stages:

- *Conceptual*: which measures best represent improved policy coherence for each element of the framework. This process adopted two stages itself:
- Firstly, adoption of CDI or PCDI indicators for the relevant devolved policy area.
- Secondly, the use of indicators suggested in the wider literature and stakeholder discussions to cover those policy areas that are not covered by CDI/PCDI frameworks
- *Practical*: what are the practical steps necessary to populate these measures with robust data, updated on a regular basis at reasonable cost.

3.1.6. The remainder of this section considers the issues arising from the conceptual stage of the process, while the practical investigation of potential variables and data sources is detailed in the next section.

3.1.7. The decision process behind the development of the NPF indicator is reproduced in Annex D. It also includes the account of the decisions taken to refine the indicator, based on comments from the project steering group, discussions with stakeholders supporting Scotland's international development activities and input from the Scottish Government International Development policy team. The draft framework is set out in the table below, the rationale for the inclusion of these measures is in Annex D.

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<sup>13</sup> See Annexes B and C for detail on CDI and PCDI mapping. The OECD has a long-standing work programme on Policy Coherence for Sustainable Development and the Meeting Summary of the 16<sup>th</sup> Meeting of the National Focal Points for Policy Coherence, 20 February 2019 provides an overview of progress to date.

Table 3.1: Initial Framework for Scotland's Contribution of development support to other nations

Scotland's Ambitions	What this means
<b>We are good global citizens</b>	<ul style="list-style-type: none"> <li>• We work with partners to build capacity and engage in dialogue on development and human rights</li> <li>• We support migrant and asylum seeker populations coming to Scotland</li> <li>• We welcome students from developing countries to our educational institutions</li> <li>• We support other nations in humanitarian emergencies</li> </ul>
<b>We avoid harm to the development of other nations</b>	<ul style="list-style-type: none"> <li>• We avoid contributing to climate change and environmental damage internationally</li> <li>• We support social enterprise, investment, innovation internationally</li> <li>• We trade and invest fairly</li> </ul>
<b>We support development in other nations</b>	<ul style="list-style-type: none"> <li>• We work to reduce poverty</li> <li>• We promote equality and human rights</li> <li>• We promote knowledge exchange and share the experience and expertise of our public, private and community sectors</li> <li>• We work to improve health outcomes</li> <li>• We advocate trade to support development</li> <li>• We support fairness under the law</li> </ul>

3.1.8. There are two areas that have so far proved challenging to capture a simple all encompassing Scotland measure:

- An indicator of the range and quality of partnership working in Scotland in support of development in other nations. Partnerships are easy to describe but difficult to define. Measures of the performance are inherently multi-dimensional and difficult to capture in one or two indicators. The pathway *We work with partners to build capacity and engage in dialogue on development and human rights* was included specifically to capture such partnership activity, especially in relation to Scotland's International Framework.
- An indicator of the value of expertise provided by Scotland across the different policy areas. Capturing the scale and quality of the contribution arising from the provision of expertise is similarly challenging in a measure that should cover all of Scotland's contribution. Simple measures of the time spent by experts supporting development do not reflect their quality and insight and the diversity of these attributes hinders an aggregate measure of their quality.

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3.1.9. The first draft framework was discussed in two stakeholder workshops involving Scottish Government policy teams from the International Development policy team and external stakeholders. There was general agreement on the structure of the framework but it was suggested that the framework should also:

- Consider including humanitarian support provided by Scotland;
- Explore what indicators may best reflect the expert input provided by Scotland into the development process;
- Look to include the scale of civil engagement,
- Capture partnership working between national, local government and agencies and civil society organisations;
- Include other potential negative factors such as Scotland's arms production for exports.

3.1.10. These suggestions were taken into account by adding humanitarian support to Scotland's ambitions and additional indicator components. The draft indicator had 25 proposed components, following these internal and external discussions. At this stage it is important to recognise that these measures were conceptual and the process for developing indicators (a defined measure with a specific data source) was the next stage of the process. This is outlined in the next section.

Table 3.2: Initial approach for Scotland’s contribution to the development of other nations

Scottish Values	Pathways – What this means for contribution to development of other nations	Rationale for inclusion
<b>We are good global citizens</b>	<p>We work with partners to build capacity and engage in dialogue on development and human rights</p> <p>We support migrant and asylum seeker populations coming to Scotland</p> <p>We welcome students from developing countries to our educational institutions</p> <p>We support other nations in humanitarian emergencies</p>	<p>Partnership working has a long tradition in Scotland that combines with fair values to engage partners across a wide range of issues<sup>14</sup></p> <p>Scotland has taken a different approach to welcoming migrant workers and asylum seekers to help create a more diverse and innovative society<sup>15</sup></p> <p>Attraction of a diverse student body is important to HEIs to sit alongside involvement in international development projects and help build soft power in a wider range of alumni<sup>16</sup>.</p> <p>Scottish people recognize and are concerned by the plight of people suffering from emergency situations<sup>17</sup></p>
<b>We avoid harm to the development of other nations</b>	<p>We avoid contributing to climate change and environmental damage internationally</p> <p>We trade and invest fairly</p> <p>We support social enterprise, investment, innovation internationally</p> <p>We work to reduce poverty</p>	<p>It is vital that Scotland can demonstrate that it has already taken difficult decisions on low-carbon growth and ensuring that Scotland can minimize waste exports to other countries in order to encourage greater investment in low-carbon development<sup>18</sup></p> <p>Scotland has particular expertise in the development and deployment of renewable power<sup>19</sup></p> <p>Ensuring fair and open trade with ODA countries by minimizing the impact of agricultural subsidies<sup>20</sup>.</p> <p>Fair Trade, investment and social enterprise is an important part of Scottish economic development<sup>21</sup></p> <p>Poverty reduction is a key policy priority in Scotland<sup>22</sup></p>

<sup>14</sup> Tewes-Gradi et al (2014) Proving and Improving: the Impact of Development Partnerships, 12 Good practices for results measurement, German Federal Ministry for Economic Cooperation and Development, 2014, Global Partnership for Effective Development Co-operation, Nairobi Outcome Document, 1 December 2016 and NIDOS (2014) Policy Coherence for Development: Exploring and Learning from European PCD Approaches, NIDOS, November 2014.

<sup>15</sup> CGD (2018) Commitment to Development Index: 2018 Edition, Methodological Overview Paper September 2018. p44

<sup>16</sup> CGD (2018) Commitment to Development Index: 2018 Edition, Methodological Overview Paper September 2018. p44 and CPC interviews with HEI stakeholders on the importance of a diverse student body.

Scottish Values	Pathways – What this means for contribution to development of other nations	Rationale for inclusion
<b>We support development in other nations</b>	We promote equality and human rights	Promoting equality, diversity and inclusion are cornerstones of Scottish policies across the public, private and community sectors. <sup>23</sup>
	We promote knowledge exchange and share the experience and expertise of our public, private and community sectors	Promoting the sharing and co-production of knowledge through enduring research partnerships is a cornerstone of HEIs approach to working with ODA countries <sup>24</sup>
	We work to improve health outcomes	Promoting the sharing and co-production of knowledge through enduring health partnerships <sup>25</sup>
	We value trade to support development	Open trade with ODA countries drives faster economic development <sup>17</sup>
	We support fairness under the law	Fairness and access to Justice through better community policing has established Scotland as international best practice <sup>26</sup>

<sup>17</sup> Raised in discussions with external stakeholders at a workshop held by Scottish Government, 7 August 2019.

<sup>18</sup> OECD (2015) Policy Coherence for Sustainable Development in the SDG Framework: Shaping Targets and Monitoring Progress, 2015.

<sup>19</sup> CGD (2018) Commitment to Development Index: 2018 Edition, Methodological Overview Paper September 2018, p30

<sup>20</sup> CGD (2018) Commitment to Development Index: 2018 Edition, Methodological Overview Paper September 2018. p35 Rich countries' policies have a significant impact on the trading prospects of developing countries.

<sup>21</sup> Ibid.

<sup>22</sup> PCDI| (2016) PCDI Report Chapter 4, p132.

<sup>23</sup> King et al (2012) Measuring Policy Coherence for Development, European Centre for Development Policy Management, May 2012 and OECD (2015) op cit.

<sup>24</sup> CGD (2018) Commitment to Development Index: 2018 Edition, Methodological Overview Paper September 2018. p26

<sup>25</sup> King et al (2012) op cit.

<sup>26</sup> OECD (2019) Policy Coherence for Sustainable Development, 16<sup>th</sup> Meeting of the National Focal Points for Policy Coherence, 20 February 2019.

3.1.11. For completeness, the final framework is set out in Table 3.3 below. Ten pathways are retained in the final framework. Eleven indicators are proposed although one is retained as a desired measure for inclusion in the future.

Table 3.3: Final Framework for Scotland’s contribution to the development of other nations

Scottish Values	What this means for contribution to development of other nations	Linked National Outcome (NPF)
<b>We are good global citizens</b>	We work with partners to build capacity and engage in dialogue on development and human rights	Education, Economy & Human Rights
	We support migrant and asylum seeker populations coming to Scotland	Human Rights
	We welcome students from developing countries to our educational institutions	Children and Young People
<b>We avoid harm to the development of other nations</b>	We avoid contributing to climate change and environmental damage internationally	Environment
	We trade and invest fairly	Economy
<b>We support development in other nations</b>	We promote equality and human rights	Human Rights
	We promote knowledge exchange and share the experience and expertise of our public, private and community sectors	Education
	We work to improve health outcomes	Health
	We value trade to support development	Economy
	We support fairness under the law	Justice

3.1.12. The changes in the scope of the indicator between the draft and final versions have been driven by the need to define indicator components with robust and accessible datasets. This is discussed in more detail below.

## 3.2. Populating the NPF indicator with components

3.2.1. A practical stage followed the conceptual stage, described above, for populating the indicator with components.

3.2.2. Inevitably, the boundaries between the conceptual issues outlined above and the practicalities of measurement blur – what makes for a good measure of policy coherence does not necessarily mean that robust data is readily available at reasonable cost. We also need to consider the design criteria set out for the development of the NPF indicator, in particular:

- 
- A measure for Scotland, not just the Scottish Government.
  - Focused on those policy areas where Scotland has devolved responsibility.
  - Based on transparent and international data sources that can be updated in a timely fashion and with minimal cost, so that Scotland's progress can be assessed on a regular basis.
  - Provide an indicator for Scotland that can be compared over time and is not dependent on comparison with other countries.
  - Be a cardinal indicator where changes in value relate as directly as possible to changes in policy coherence<sup>27</sup>. There is limited value in selecting an indicator that is not dynamic or is already at a high level and has limited capacity to change.
  - Wherever possible not replicate an indicator already part of the NPF.

3.2.3. These criteria indeed set a relatively high bar for the inclusion of indicators. Further discussions were undertaken with Scottish Government analysts on recommended data sources and indicator definitions. These are set out in Annex D, table D.2. Wherever possible we adopted indicator components similar in nature to those used by the CDI or the PCDI.

3.2.4. In almost all cases, any proposed measures that were subsequently excluded were on the grounds of mostly (i) no robust data source available or (ii) potential data is available but only at significant cost to produce or access. This process led to the exclusion of 15 proposed indicator components:

- For twelve it was not possible to access robust data; on a regular basis at reasonable cost
- For three because a single indicator could not be identified that would adequately represent the measure and reliably represent progress for Scotland.

3.2.5. These decisions are set out in Table D.2 in Annex D. The final set of proposed indicators are included in Table 3.4 with the current indicator values and sources of data used to calculate these.

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<sup>27</sup> Following the workshop with the Center for Global Development it was agreed that the indicators should not include binary (i.e. yes/ no) measures such as whether Scotland has adopted an international standard or other policy etc. The reasoning behind this choice is that such measures can only have two values (0 or 100%) and rarely change. This would distort any incremental changes in other indicators.



Table 3.4: Final Proposed Indicator component set for the NPF indicator

Scottish Values	What this means for contribution to development of other nations	Proposed Indicator	Source	Value
<b>We are good global citizens</b>	We work with partners to build capacity and engage in dialogue on development and human rights	<ul style="list-style-type: none"> <li>Scotland's connectedness to ODA recipient countries</li> </ul>	<ul style="list-style-type: none"> <li>Data not yet available<sup>28</sup></li> </ul>	<ul style="list-style-type: none"> <li>n/a</li> </ul>
	We support migrant and asylum seeker populations coming to Scotland	<ul style="list-style-type: none"> <li>Asylum seekers settled in Scotland per 100,000 population</li> </ul>	<ul style="list-style-type: none"> <li>National Statistics regional data on Asylum support</li> </ul>	<ul style="list-style-type: none"> <li>3,916 in Jun 2018.</li> <li>72.01 per 100,000 population.</li> </ul>
	We welcome students from developing countries to our educational institutions	<ul style="list-style-type: none"> <li>HE Students from DAC Least Developed Countries / Total Non-EU Students</li> </ul>	<ul style="list-style-type: none"> <li>HEFC data of students from Low income ODA countries studying on HE courses in Scotland as a % of all non-EU students</li> </ul>	<ul style="list-style-type: none"> <li>2.7% in 2018</li> </ul>
<b>We avoid harm to the development of other nations</b>	We avoid contributing to climate change and environmental damage internationally	<ul style="list-style-type: none"> <li>% of total waste treated in Scotland (SEPA)</li> <li>Value of the Low Carbon and Renewable Energy Economy (LCREE) in Scotland</li> </ul>	<ul style="list-style-type: none"> <li>SEPA report for 2016 % of waste treated domestically.</li> <li>BEIS report on low carbon economy</li> </ul>	<ul style="list-style-type: none"> <li>85% in 2016</li> <li>£11.1bn in 2017</li> </ul>
	We trade and invest fairly	<ul style="list-style-type: none"> <li>Value of Agricultural subsidies</li> </ul>	<ul style="list-style-type: none"> <li>Total Income from Farming estimates for Scotland 2016-18, Jan 2019</li> </ul>	<ul style="list-style-type: none"> <li>£502m in 2018</li> </ul>
<b>We support development in other nations</b>	We promote equality and human rights	<ul style="list-style-type: none"> <li>% of international development funding devoted to vulnerable groups</li> </ul>	<ul style="list-style-type: none"> <li>SG data on annual spent on IDF projects: Percentage of total IDF spending that the</li> </ul>	<ul style="list-style-type: none"> <li>38.9% in 2018-19</li> </ul>

<sup>28</sup> This indicator is currently not included in the calculation. It will be drawn from the 'International networks' indicator in the international outcome which allows for the singling out of countries with the attribute 'ODA recipient' to calculate a single score of how internationally connected Scotland is to them in economic, political, social and cultural domain.

Scottish Values	What this means for contribution to development of other nations	Proposed Indicator	Source	Value
			sum of projects that report or should report on protected characteristics represent.	
	We promote knowledge exchange and share the experience and expertise of our public, private and community sectors	<ul style="list-style-type: none"> <li>Value of R&amp;D contracts in HEIs in partnership with ODA-eligible nations</li> </ul>	<ul style="list-style-type: none"> <li>UKRI Gateway to Research value of research projects that include partner from low income ODA country as % of total</li> </ul>	<ul style="list-style-type: none"> <li>5.46 % in 2017</li> </ul>
	We advocate trade to support development	<ul style="list-style-type: none"> <li>Value of goods imports from low income ODA countries</li> </ul>	<ul style="list-style-type: none"> <li>Low income ODA imports of total goods imports Ex-EU in 2018.</li> </ul>	<ul style="list-style-type: none"> <li>5% in 2018</li> </ul>

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### 3.3. Calculating a composite indicator for the NPF

3.3.1. The objective of this assignment has been to identify a number of relevant indicator components that together provide a practical measure of Scotland's contribution to the development support to other nations. For the purposes of the National Performance Framework (NPF), this measure needs to be a single composite index. So, the final stage of this process is to determine how this should best be achieved using international best practice.

3.3.2. Three international indices - the Campaign for Global Development Contribution to Development Index (CDI) and the Policy Coherence for Development Index (PCDI) (both reviewed in section 2) and the United Nations Human Development Index (HDI) used by the United Nations Development Programme<sup>29</sup> have developed methodologies for translating their individual indicators into a single index value.

3.3.3. The details of this process are included in Annex D. Each index adopts a slightly different approach, but there are a number of common stages:

- Techniques for addressing any missing values and data outliers;
- Standardised performance measures on a common scale to combine values to reflect the degree of change;
- Combine these values using weights to reflect relative importance of a component to international development.

3.3.4. The range of data collated on different countries by each of the indices is crucial to their approach to each stage:

- Missing values are often substituted using an average/benchmark value from other countries. Such averages are also used to identify and adjust any data outliers that may represent inaccurate or unreliable data;
- Both CDI and PCDI and to a lesser extent HDI use the minimum and maximum measured values for specific indicators to benchmark each country's actual value.
- PCDI uses the range of data from countries to statistically weight the importance of different indicators for policy coherence. However, as with CDI the final weighting is set by expert judgement.

3.3.5. For the NPF index, where there is only data available for Scotland, this approach has a number of implications:

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<sup>29</sup> The HDI is not a measure of policy coherence and so was not included in the review but does use a method to combine different indicators into a single index.

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- There is no need for a missing value approach as the selected indicator components were chosen because robust, regularly updated data sources are available.
  - It would be possible to create benchmark values in order to normalise the individual variables, for example, using EU28 values to compare with Scotland. However, this would contravene a key design principle that the NPF indicator should not be reliant on comparisons with other countries<sup>30</sup> and most importantly, it would limit the amount of data available further.

3.3.6. This suggests that the most straightforward approach is that the NPF indicator takes a year-on-year change in the combined indicator components as a measure of progress. The baseline year of this NPF indicator will have a value of 100. Subsequent scores will move in line with percentage change on this baseline value – for example, a 4% increase would provide a value of 104 and a 4% decline 96%.

3.3.7. Finally, this leaves the question of whether the individual pathways in the framework should be given different weight in calculating the overall contribution to the development of other nations. Both CDI and PCDI have adopted expert judgement in providing differential weights to their elements. These have been criticised in the literature as being opaque and difficult to interpret. We recommend that no weighting be applied to the different pathways in the framework at this stage, simply because we can find no robust evidence to suggest that any one element is more important than another. Should such evidence become available in the future then this recommendation should be revisited.

3.3.8. The combination of indicators should be undertaken using a geometric mean (rather than an arithmetic mean, for example). This is method adopted by the UNDP's HDI as it does not allow significant changes in one indicator to dominate the index as a whole and so indicators with very different scales can be combined. The geometric mean of n indicators is defined as:

$$\sqrt[n]{(I_1 \times I_2 \times \dots \times I_n)}$$

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<sup>30</sup> It is also worth noting that the min-max method of normalisation may introduce a degree of inconsistency between years as changes in the upper and lower values would deliver changes in the normalised indicator even where the country indicator did not itself change in value.

## 4. Populating the Index with Data

4.1. Table 4.1 sets out the raw data for the selected indicator components. Full source information is included and this is also available at request in the accompanying excel workbook. We have data for the period 2014 to 2017 for all indicators and to 2018 for some. Further data for 2018 will become available in future. For this reason, 2017 was chosen as the baseline year for the indicator. The prevailing value of each indicator component is set to equal 100 in 2017 and other years are expressed as variations from this year<sup>31</sup>. Previous data for before 2014 is more restricted, because either the data series did not exist or definitional change mean that the data are not directly comparable.

4.2. As discussed previously all the indicators bar the Value of Agricultural subsidies are expected to have a positive impact on policy coherence the larger their value. This is not the case for the Value of Agricultural subsidies so the indicator is the inverse (i.e. 1/index). This means that as the value of Agricultural subsidies rises, the index falls and vice-versa.

4.3. Where relevant indicators have been constructed as proportions, for example, value of goods imports from least developed ODA countries as a proportion of all non-EU goods imports. This has the effect of dampening any fluctuations that may be due to other factors affecting the absolute level of the indicator (such as a general decline in research funding). Compared to using just the absolute value of imports from least developed ODA countries there is some evidence that indicator demonstrates less variation. However, there are too few observations available to provide a formal statistical analysis of the variation in the indicator values.

4.4. A number of characteristics can be observed of the distribution of indicator values:

- Three indicators have relatively small ranges of less than 10% of their baseline value (Proportion of total waste managed in Scotland, Agricultural Subsidies and value of the low carbon economy)
- Just on indicator has a range above 50% and that is because the value in the baseline year is more than 2.5 times higher than the next largest, with the other four values being within 20% of each other (Research funding involving LDC country partners).
- Three have a range between 20 and 40% (asylum seekers in Scotland, HE students from LDCs and Goods imports from LDCs).

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<sup>31</sup> The formula for this calculation is  $\text{Year1}/\text{Baseline year} \times 100$ .

Table 4.1: Calculation of NPF Indicator components and Indices

	2014	2015	2016	2017	2018
<b>We are good global citizens</b>					
National Statistics regional data on number of Asylum seekers in receipt of Section 95 support: 30 June figures	2,521	2,649	3,209	3,649	3,916
Mid-year population estimates Scotland	5,347,600	5,373,000	5,404,700	5,424,800	5,438,100
<b>Asylum seekers settled in Scotland per 100,000 population</b>	<b>47.14</b>	<b>49.30</b>	<b>59.37</b>	<b>67.27</b>	<b>72.01</b>
<b>Index value</b>	<b>70.08</b>	<b>73.30</b>	<b>88.27</b>	<b>100.00</b>	<b>107.05</b>
HE Students in Scotland Institutions from DAC Least Developed Countries (Academic years 14-15 to 17-18) <sup>2</sup>	760	945	970	870	
Total Non-EU HE Students in Scottish Institutions <sup>2</sup>	29,210	29,980	31,046	32,630	
<b>Percentage of Students from DAC Least Developed Countries</b>	<b>2.6%</b>	<b>3.2%</b>	<b>3.1%</b>	<b>2.7%</b>	
<b>Index value</b>	<b>97.6</b>	<b>118.2</b>	<b>117.2</b>	<b>100.0</b>	
<b>We avoid harm to the development of other nations</b>					
Total waste managed in Scotland (Tonnes) <sup>3</sup>	9,251,293	10,277,684	10,250,903	10,405,781	
Total waste managed in Scotland and abroad (Tonnes) <sup>3</sup>	10,364,209	11,393,752	11,748,493	11,931,754	
<b>Proportion of total waste managed in Scotland</b>	<b>89.3%</b>	<b>90.2%</b>	<b>87.3%</b>	<b>87.2%</b>	
<b>Index value</b>	<b>102.4</b>	<b>103.4</b>	<b>100.0</b>	<b>100</b>	
Value of the Low Carbon and Renewable Energy Economy (LCREE) in Scotland (£bn) <sup>4</sup>	10.7	10.1	10.4	11.1	
Total GVA Scotland current prices (£bn) <sup>7</sup>	128.9	129.8	133.7	138.6	
Percentage of LCREE	8.3%	7.8%	7.8%	8.0%	
<b>Index value</b>	<b>103.7</b>	<b>97.1</b>	<b>97.1</b>	<b>100</b>	
Total Payments and subsidies to Agricultural production <sup>5</sup>	522	479	486	489	502
Index value	106.7	98.0	99.4	100.0	102.7
<b>Index value (inverse)</b>	<b>93.7</b>	<b>102.1</b>	<b>100.6</b>	<b>100.0</b>	<b>97.4</b>
<b>We support development in other nations</b>					
Total value of UKRI research funding for Scottish institutions involving partners in ODA least developed countries <sup>6</sup>	£6,826,292	£6,848,663	£2,565,139	£17,496,705	£6,708,800
Total value of UKRI research funding for Scottish institutions	£320,352,726	£347,399,354	£253,451,899	£320,663,948	£406,527,100
Percentage of ODA research funding of total research funding	2.13%	1.97%	1.01%	5.46%	1.65%

	2014	2015	2016	2017	2018
<b>Index value</b>	<b>39.1</b>	<b>36.1</b>	<b>18.5</b>	<b>100.0</b>	<b>30.2</b>
Value of the Scottish Government's International Development Funding (£)					<b>8.292.750</b>
Value of of international development funding reporting on protected characteristics					<b>3.224.798</b>
<b>The percentage of spending out of the IDF budget of projects that report/should report on protected characteristics</b>					<b>38.88%</b>
<b>Index Value</b>					<b>100.0</b>
Value of goods imports from ODA countries (£000's) <sup>7</sup>	124,441	195,929	197,124	253,337	223,438
Value of goods imports all non-EU (£000's) <sup>7</sup>	14,514,147	12,272,471	13,188,847	15,116,761	15,193,475
<b>Proportion of goods imports from least developed ODA countries</b>	<b>0.9%</b>	<b>1.6%</b>	<b>1.5%</b>	<b>1.7%</b>	<b>1.5%</b>
<b>Index value</b>	<b>51.2</b>	<b>95.3</b>	<b>89.2</b>	<b>100.0</b>	<b>87.8</b>

<sup>1</sup> Home Office Asylum and Protection - Section 95 support by local authority statistics and [www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/population/population-estimates/mid-year-population-estimates/population-estimates-time-series-data](http://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/population/population-estimates/mid-year-population-estimates/population-estimates-time-series-data)

<sup>2</sup> [www.hesa.ac.uk/data-and-analysis/students/table-11](http://www.hesa.ac.uk/data-and-analysis/students/table-11)

<sup>3</sup> <https://www.environment.gov.scot/data/data-analysis/waste-from-all-sources/>

<sup>4</sup> [www.ons.gov.uk/economy/environmentalaccounts/bulletins/finalesimates/2017#direct-and-indirect-activity-in-the-low-carbon-and-renewable-energy-economy-generated-796-billion-turnover-in-2017](http://www.ons.gov.uk/economy/environmentalaccounts/bulletins/finalesimates/2017#direct-and-indirect-activity-in-the-low-carbon-and-renewable-energy-economy-generated-796-billion-turnover-in-2017) and [www2.gov.scot/Topics/Statistics/Browse/Economy/QNA2019Q2](http://www2.gov.scot/Topics/Statistics/Browse/Economy/QNA2019Q2)

<sup>5</sup> [www.gov.scot/publications/total-income-farming-estimates-scotland-2016-18/](http://www.gov.scot/publications/total-income-farming-estimates-scotland-2016-18/)

<sup>6</sup> Gateway to Research total research funds for lead researcher in Scottish Institution and research collaborator in DAC least developed country at <https://gtr.ukri.org/>

<sup>7</sup> [www.uktradeinfo.com/Statistics/BuildYourOwnTables/Pages/Table.aspx](http://www.uktradeinfo.com/Statistics/BuildYourOwnTables/Pages/Table.aspx)

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4.5. The trends in the indicator values are also mixed:

- Four indicators increase steadily to their baseline value in 2017 (Asylum seekers in Scotland, Goods imports from LDCs, Agricultural subsidies and HE students from LDCs apart from the baseline year).
- Two decline marginally over the same period (Waste managed in Scotland and Value of the low carbon economy).
- One (value of R&D contracts in HEIs in partnership with LDC ODAs) has an outlier value in the baseline year<sup>32</sup>.

4.6. Table 4.2 presents the overall index for Scotland's contribution to the development of other nations. This is the geometric mean of the indices for the seven indicators. As noted previously, using a geometric mean has the advantage of reducing the impact of outliers on the average and so producing a more stable index. Over the period, the index have varied by just under 25% compared to an average of 35% across the individual indicator indices (but over the first three years variation is less than 10%).

Table 4.2: 2014-17 Contribution to development to other nations

	2014	2015	2016	2017
Index of Scotland's Contribution to the Development of other nations	75.2	84.4	77.5	100.0

4.7. While we are not in a position to forecast the future direction and scale of change in the index, we believe that it would be prudent to start with an assumption that changes in the index of 5+/- should be considered the threshold for reporting change. On the basis that 2017 index is set to the baseline of 100, this would mean observed changes in the index should be reported accordingly:

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<sup>32</sup> This is due to two very large Global Challenge Research Fund awards in 2017. While these increase the value of the indicator significant we have no reason to suggest that this is anomalous.



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Table 4.3: Threshold for change

<b>Value of Index in 2018</b>	<b>Measure of change</b>
greater than 105	Improving index value
95 to 105	Maintaining index value
Less than 95	Worsening index value

4.8. If in future, the index demonstrates more significant variation, then these should be reviewed. It should be noted that there is no current basis for estimating how much of a change in the index will deliver tangible impacts on policy coherence that will deliver sustainable development. To date research has not been able to establish a robust analysis of the relationship between these

## 5. Future Development of the Indicator

### 5.1. Potential changes in the indicator in future

5.1.1. The literature on how policy coherence and the activities of non-governmental actors lead to sustainable development is broad but often imprecise. A number of countries have established monitoring systems that are intended to track progress in policy coherence but on closer investigation contain vague concepts rather than measurable indicators of change. Large scale evaluations have so far failed to establish an impact that can be clearly attributed to policy coherence action. Moreover, these evaluations are largely focused on policy activity, while the indicators for the NPF is intended to measure the contribution of development support to other nations from Scotland as a whole.

5.1.2. This suggests that greater attention to the Beyond Aid agenda and related policy coherence activity will enhance our understanding of the critical factors that deliver results. Further research and evaluations should help bridge the 'logic chain gap' and may offer a new source of potential indicator components to be included in this NPF index.

5.1.3. This implies that Scotland should keep the NPF measure under review and seek to update and amend the individual indicators periodically as necessary. There would appear to be a number of areas where this may be worthwhile in future:

- Include more policy areas if and when these are devolved to Scotland.
- Seek to include wider measures of partnership working and the contributions of Scottish expertise that is not captured in simple input measures. These remain key advantages in the Scottish approach that many stakeholders pointed to as having a key influence in their relationships with ODA countries. While they have proved intractable to a low-cost data collation process, new data sources may become available in future that could address this gap.
- A more specific gap that may be filled by Scottish Government itself is the reporting on partnership activity associated with the International Framework Strategy. At present no data is collected on the spend on partnerships at this level but this may also change in future.

5.1.4. Other data sources should persist into the future as most are based on official statistics. The calculation of the value of the low carbon economy is a specific large scale survey initially undertaken by BEIS but now adopted by National Statistics. This is to be undertaken biennially. However, as with all survey evidence there are no guarantees that these will persist for the next decade.

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5.1.5. Other sources such as data on the Grand Challenges Research Fund (GCRF) and Newton research funds are expected to include greater detail on the nature of research partnerships with ODA countries and networks. These are in development but may provide source data that could add to the indicators on research collaborations between research organisations in Scotland and developing countries.

## **5.2. Stability and Sensitivity testing**

5.2.1. The previous section highlights that due to a limited number of observations, we have been able to undertake only limited analysis of the stability and sensitivity testing. As more data becomes available it should be possible to explore how the value of the index responds to changes in individual indicators. As there is no weighting involved, any variation in the overall value of the index will be driven by the scale of change (year-on-year) in the individual indicators. The use of a geometric average does have the effect of dampening any significant variations in individual indicators and is the primary reason for its adoption.

## Acknowledgements

We would like to acknowledge the contribution to this research from those stakeholders who contributed their time to discuss their experience of policy coherence and how Scottish Government might build on this. In particular, stakeholders who took part in the interview programme and those who attended the workshops both colleagues from inside Scottish Government and those from external organisations.

We also wish to thank the Center for Global Development who shared their own extensive experience of developing similar indices and reviewed this report and provided useful comments on the draft version.

Finally, we wish to thank the project manager from Scottish Government who has guided this research and provided helpful advice throughout.

# **ANNEX A Devolved and Reserved Matters**

Table A.1 Devolved and reserved matters<sup>33</sup>

Devolved matters	When
Agriculture, forestry and fishing	All areas were devolved in 1998 under the Scotland Act 1998
Education and training	All areas were devolved in 1998 under the Scotland Act 1998
Elections to the Scottish Parliament	This area was devolved in 2012 and 2016
Environment	Most areas were devolved in 1998. Energy efficiency schemes were devolved in 2016
Health and social services	These areas, including the NHS, funding, health education, health services, medicine, public health and mental health were devolved in 1998. Social work was devolved in 1998. Social security benefits were devolved in 2016
Housing	All areas, including policy and building control were devolved in 1998. Land use planning was devolved in 1998
Law and order	Areas including civil justice, civil law and procedure, courts, criminal justice, criminal law and procedure, police, debt and bankruptcy, family law, freedom of information, legal aid, legal profession, licensing law and property law were devolved in 1998. The drink drive alcohol limit was devolved in 2012. Railway policing was devolved in 2016.
Local government	This area was devolved in 1998 and the local government franchise was added in 2016.
Sport and the arts	This was devolved in 1998 and includes support for creative industries, Creative Scotland, national gallery, library and museum collections, national performing companies, sport Scotland and major events.
Some forms of taxation	Scottish Variable Rate of Income Tax was devolved in 1998. In 2016, the partial assignment of VAT revenues was given and in 2012, powers were given to set the Scottish Rate of Income Tax (SRIT), Land and Buildings Transaction Tax and Landfill Tax.

<sup>33</sup> <https://www.parliament.scot/visitandlearn/Education/18642.aspx>

Many aspects of transport	Aspects of Transport including passenger rail franchise, road signs, speed limits, air passenger duty 2016. (Most powers over aviation, shipping and road traffic law are reserved as is HGV and bus driver, vehicle and operator licensing)
Welfare	Including social security benefits such as Disability Living Allowance, Personal independence Payment, Carer's Allowance, Severe Disablement Allowance, Discretionary Housing Payments and Winter Fuel Payments, fuel poverty schemes were devolved in 2016.
<b>Reserved Matters</b>	
Benefits and social security	(except those above)
Immigration	
Defence	
Foreign policy	
Employment	
Broadcasting	
Trade and Industry	
Nuclear energy, oil, coal, gas and electricity	
Consumer rights	
Data protection	
The Constitution	

# ANNEX B Review of the Commitment to Development Index (CDI)

## Background

It should be stressed at the outset that this review is simply in terms of the extent to which the long-standing benchmark Commitment to Development Index (or a subset of indicators) is suited to being indicators of Scotland's contribution to international development.

The CDI was originally established in 2003 and has been updated regularly since with some revisions to the methodology meaning that not all years are directly comparable.

While it is clearly possible to track the change in the CDI over time, the real strength of the CDI measure is that it applies a consistent methodology to the international development activities of a number of countries so that their contributions can be viewed comparatively.

## Description of CDI structure and purpose

The CDI is a composite index constructed from seven components – Aid, Finance, Technology, Environment, Trade, Security and Migration. Each component is made up of sub-components and the sub-components are in turn a composite of individual indicators. A full list of indicators is included in table B.1 and B.2 below .

The index builds up a score for each country from the composite of these indicators so that a score is available for the country's contribution to development overall, at component level and at indicator level. There are two types of scores: raw scores and standardised scores:

- Raw scores are simply the measure of a subcomponent or indicator in the original measurement terms (e.g. percent carbon emissions reduction over 10 years, dollar value public research subsidies, refugees per capita, etc.). But given that these scores are made on very different scales, standardising is necessary to enable comparison across indicators and calculation of performance and ranking.
- Each country's raw score is then standardised as a Z score, with a mean of 5 and standard deviation of 1 (so the vast majority of scores are between 3 and 7). Some indicators' scores are standardised negatively, which means a lower raw score translates into a higher



standardised score. This is true of negative factors such as arms exports or greenhouse gas emissions.

Table B.1 CGD CDI structure

Component	Sub-Component
<b>Aid</b>	Quantity (50%) Quality (50%)
<b>Finance</b>	Investment (50%) Financial secrecy (50%)
<b>Technology</b>	Government support to R&D (66%) Intellectual Property Rights (33%)
<b>Environment</b>	Global climate (60%) Sustainable fisheries (10%) Biodiversity and global ecosystems (30%)
<b>Trade</b>	Lower income weighted tariffs (40%) Agricultural subsidies (10%) Services Trade Restrictions (25%) Logistics Performance (25%)
<b>Security</b>	Contributions to peacekeeping (55%) Arms exports (15%) Participation in security regimes (30%)
<b>Migration</b>	International conventions (10%) Integration policies (25%) Share of asylum seekers (10%) Share of refugees (10%) Foreign students (15%) Immigrant inflow (30%)

Each sub-component and within each sub-component each indicator is given a weight. The intention is to weight indicators according to the evidence, and CGDs judgement, on their contribution to development. In practice, the CDI designers chose to weight some indicators more than others. The weights are backed by many years of expertise and experience in the relevant fields:

- At the top level of the CDI hierarchy, the components are equally weighted (each represents 14.29%) i.e. CDI do not weigh the environment or trade more highly than say migration based on their perceived relative importance.
- CGD do, however, weight the main component by the inverse of the standard deviations: this has the effect of giving less weight to those

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components with high variance so that outliers do not dominate the index<sup>34</sup>.

It is worth noting that as the CDI reports themselves acknowledge, the application of these weights and adjustments is where the index receives most challenge. The decision to dampen any high variation at component level is one that has provoked many challenges.

These choices have been made to ensure that the index provides a stable measure of differences between countries (and presumably cut down the 'noise' in some indicators). The question for this assignment is not whether they are technically justified but whether they fit with Scotland's priorities for international development<sup>35</sup>. The details of the weightings are included in this Annex.

## **Fit with Scotland's Devolved Policy Matters**

The degree to which Scotland currently has devolved responsibility for the policy domains in the CDI provides the strongest binding constraint on the CDI as an index to represent Scottish policy impact. Three of the CDI components cover policy areas that are wholly reserved (Finance, Trade – with the exception of agriculture – and Security) and only in the Environment component does Scotland have a majority of devolved responsibility but even here each sub-component contains a Treaty ratification indicator that remains a reserved matter for the UK Government. (See Annex A for a list of currently devolved and reserved policy matters).

Table B.2 shows that the Scottish Government has devolved power in relation to at most 36% of the CDI weighted indicators. Although this proportion is dependent on allocating the whole of some sub-components where we believe some policy aspects are devolved, they probably represent a minority of activity in these categories but we have no basis on which to sub-divide the weights for these indicators. For example, Scotland is responsible for the policies around welcoming migrants to Scotland but currently has no control over the criteria used to determine the number of migrants settled and the conditions under which this is permitted, such as the regulations relating to their ability to work while they await any applications to stay.

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<sup>34</sup> We assume that the variation referred to here is over time between different years of the same indicator in a specific country but we have not yet been able to confirm this.

<sup>35</sup> Soria, E. (2015) Implementing policy coherence for sustainable development beyond 2015, p.40-42, OECD (2015) Better Policies for Development 2015: Policy Coherence and Green Growth, OECD Publishing, Paris.

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While this means that the CDI as a whole would more often reflect the position of the UK rather than that of Scotland, this does not mean that individual indicators cannot play a role in the final set chosen for the NPF.

## Does CDI cover the policy themes?

Of the five policy areas selected to explore indicators for Scotland's contribution to international development, CDI indicators provide coverage of just the Climate Change theme.

<p><i>Application of equalities legislation</i></p> <p>No indicators directly measuring impacts of equalities legislation on social and economic wellbeing of equalities groups.</p>
<p><i>Climate change</i></p> <p>Indicators for Greenhouse gas emissions, sustainable fisheries and biodiversity but no measures relating to how Scotland might help countries with mitigation and adaptation measures based on renewables and work of the Just Transition Commission in ameliorating the impacts of adjustments to a net zero carbon target.</p>
<p><i>Determinants of health</i></p> <p>No indicators relating to the potential contribution to health improvement. This could include sanitation and water management as well as training in preventative health and other medical training.</p>
<p><i>Justice</i></p> <p>No indicators relating to rule of commercial and contract law and arbitration that might play a role in trade. Scotland has also developed a Trafficking and Exploitation Strategy to improve how to identify and support victims, deal with the causes of trafficking and exploitation, and punish perpetrators.</p>
<p><i>Education</i></p> <p>No component/ sub-component of CDI relates to education. The migration component does include an indicator relating to the share of foreign students from lower income countries as a proportion of non-domestic students.</p>

Table B.2: Overview of weightings across all sub-components

Sub-Component	Sub component weighting	adjusted weighting based on each component 14% of total	type of measure	SG devolved power I	% devolved
Aid Quantity (50%)	50%	7.14%	spend - overseas	no	0.00%
Aid Quality (50%)	50%	7.14%	mixed	yes	7.14%
Finance – investment (50%)	50%	7.14%	policy and or regulation	no	0.00%
Finance – financial secrecy (50%)	50%	7.14%	policy and or regulation	no	0.00%
Technology – government support to R&D (66%)	67%	9.52%	spend - domestic	Partial	9.52%
Technology – IPR (33%)	33%	4.76%	policy and or regulation	no	0.00%
Environment – global climate (60%)	60%	8.57%	production and emissions	yes	8.57%
Environment – sustainable fisheries (10%)	10%	1.43%	policy and or regulation	yes	1.43%
Environment – biodiversity and global ecosystems (30%)	30%	4.29%	policy and or regulation	yes	4.29%
Trade – Lower income weighted tariffs (40%)	40%	5.71%	tariffs and subsidies	no	0.00%
Trade – Agricultural subsidies (10%)	10%	1.43%	tariffs and subsidies	yes	1.43%
Trade – Services Trade Restrictions (25%)	25%	3.57%	policy and or regulation	no	0.00%
Trade – Logistics Performance (25%)	25%	3.57%	infrastructure	no	0.00%
Security – contributions to peacekeeping (55%)	55%	7.86%	spend - overseas	no	0.00%
Security – arms exports (15%)	15%	2.14%	exports	no	0.00%
Security – participation in security regimes (30%)	30%	4.29%	policy and or regulation	no	0.00%
Migration – international conventions (10%)	10%	1.43%	policy and or regulation	no	0.00%
Migration – Integration policies (25%)	25%	3.57%	policy and or regulation	Yes partial	3.57%
Migration – Share of asylum seekers (10%)	10%	1.43%	migrants and asylum seekers	no	0.00%
Migration – Share of refugees (10%)	10%	1.43%	migrants and asylum seekers	no	0.00%
Migration – Foreign students (15%)	15%	2.14%	migrants and asylum seekers	yes	2.14%
Migration – Immigrant inflow (30%)	30%	4.29%	migrants and asylum seekers	no	0.00%
		100.00%			38.09%

# ANNEX C Review of Policy Coherence for Development Indicators

## Background

PCD is an approach and policy tool for integrating the economic, social, environmental and governance dimensions of sustainable development at all stages of domestic and international policy making. It is the aim of Policy Coherence for Development to make foreign relations to be as ecologically, economically and socially coherent as possible and thereby to make international co-operation for international development more effective.<sup>36</sup> The literature on Policy Coherence for Development (PCD), and more recently Policy Coherence for Sustainable Development (PCSD), is extensive with the earliest references back to 2005 being developed by the OECD and European Commission among other institutions.

PCD has been discussed in relation to the concept of Global Public Goods (GPGs). GPGs are in principle available to everyone and each country has an interest in contributing to their promotion. Examples might include a fair, robust and market-orientated trading system for goods and services or climate stability.

PCSD stems from the 2030 Agenda and the Addis Ababa Action Agenda. In addition, in the case of PCSD, given that the SDGs are universal, policy makers have to secure broader policy coherence by pursuing multiple goals globally. The OECD has defined PCSD as an approach and policy tool relevant to all countries, to be used at the domestic and international levels of policy making<sup>37</sup>.

The European Commission in collaboration with the Member States, identifies five broad PCD priority areas: (i) trade and finance, (ii) climate change, (iii) food security, (iv) migration and (v) security.

## Measuring the impact of PCD/ PCSD

There are a number of PCD/ PCSD frameworks in the literature but in general these focus on the policy procedures in place to ensure policy coherence for development but that the vast majority do not (yet) specify performance measures or indicators that will assess a country's progress and impact in

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<sup>36</sup> Swiss Agency for Development and Cooperation, Policy Coherence (<https://www.eda.admin.ch/deza/en/home/results-impact/policy-coherence.html>)

<sup>37</sup> Soria, E. (2015) Implementing policy coherence for sustainable development beyond 2015, p.40-42, OECD (2015) Better Policies for Development 2015: Policy Coherence and Green Growth, OECD Publishing, Paris.

implementing PCD/PCSD. An issue throughout is what has been set down in policy intent and what has been implemented to date.

In part this reflects the different mechanisms that countries have defined to drive their PCD process. These include:

- Formal parliamentary committees or formal responsibility to consider PCD/PCSD in policy development
- Annual reviews of PCD led by civil society organisations who report to government on progress and areas for improvement
- Ex-post reviews of evaluations of international development initiatives to consider how other national policies have supported or hindered their effectiveness

A recent review of the use of PCD indicators by selected EU member states highlights that those countries who have a process do not necessarily then have official performance indicators that track PCD/PCSD progress.

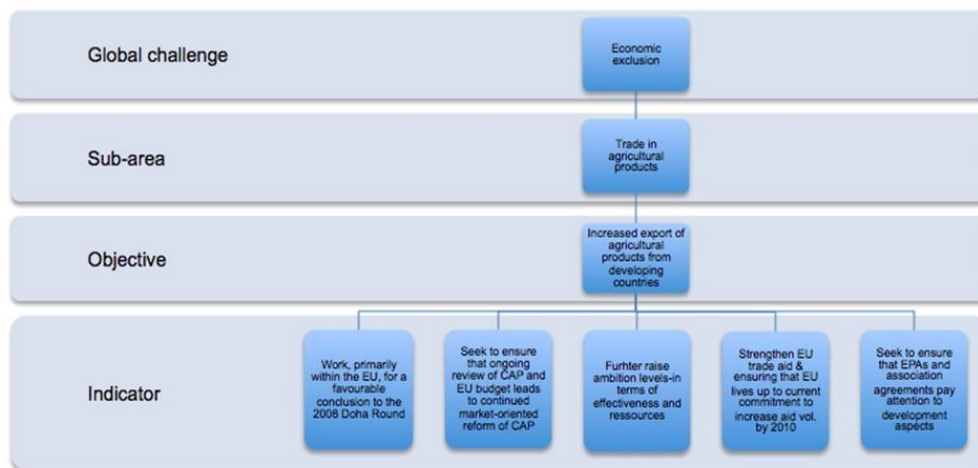
	<b>PCD Mechanism</b>	<b>'Official' cross-government PCD indicators</b>
Belgium	Yes	Not yet
Denmark	Yes	Yes
Finland	Yes	Not yet
Germany	Yes	Not yet
Ireland	Yes	Not yet
Luxembourg	Yes	Not yet
Netherlands	Yes	Yes
Sweden	Yes	Yes

Source: ECDPM Discussion paper 171, Use of PCD indicators by a selection of EU Member States, Jan 2015

A number of reviews have highlighted that there is a need to strengthen and make explicit the causal logic chain between PCD/PCSD<sup>38</sup>. An evaluation of the impact of PCD activity across member states similarly concluded that more work was required to establish a causal link between PCD/PCSD reviews of policies and the consequent impacts that might then be measured by indicators<sup>39</sup>. The overall conclusion of the evaluation was that while changes in policies could be evidenced, it was not yet possible to ascribe an impact of these changes in quantitate terms on the international development process.

Determining expectation for impact is clearly a crucial stage in the process for defining relevant and appropriate indicators that this may need to be revisited with Scottish Government colleagues.

### Example of a logic chain linking PCD/PCSD to indicators: Sweden



Source: ECDPM Discussion paper 171, Use of PCD indicators by a selection of EU Member States, Jan 2015

In their seminal paper, King and Matthews (2012) also identified the challenges that can arise by a lack of precision in measure definition. This, for example, can be at the level of using concepts as indicators – in the Swedish example above, the indicators are not indicators as they have no defined scale and could not be quantified as they stand. These criticisms are repeated by ECDPM (2015) who found that across the member states reviewed *"different logical frameworks mix up objectives, targets, actions and indicators."*<sup>40</sup>

<sup>38</sup> See King and Matthews (2012) Policy Coherence for Development: Indicators for Ireland, Institute for International Integration Studies, Trinity College, Dublin, January 2012 and ECDPM Discussion paper 171, Use of PCD indicators by a selection of EU Member States, Jan 2015 for detailed analysis of the logic chains and reviews of the PCD measures proposed.

<sup>39</sup> Nunez-Borja et al (2018), External Evaluation of the European Union's Policy Coherence for Development (2009-2016), Final Report, July 2018.

<sup>40</sup> ECDPM Discussion paper 171, Use of PCD indicators by a selection of EU Member States, Jan 2015, p7.

King and Matthews (2012) proposed that indicators be categorised to avoid this confusion:

- **Outcome indicators:** these focus on outcomes such as socio-economic variables (e.g. income per capita, student enrolment rates, etc.).
- **Policy outputs:** that capture the changes in policies designed to be more coherent with development. E.g. the level of tuition fees for students from developing countries, food tariffs for imports from developing countries, etc.
- **Policy inputs:** that should be used where it may be difficult to summarise the output of a policy into a single indicator, e.g. the proportion of funding that supports the primary objectives of the developing country.
- **Policy stance indicators:** relate to treaty or protocol agreements e.g. the signing of international agreements on financial transparency, etc.

They also proposed a set of criteria for the selection of PCD indicators:

- **Transparency:** Can a layperson understand what is happening? Does the index hide or reveal facts?
- **Policy relevance:** Does the indicator/index relate to important societal debates?
- **Analytical soundness:** Does the indicator measure the problem, or rather something else?
- **Responsiveness:** Does a politician have any chance to improve the indicator/index?
- **Time horizon:** How quickly can results be expected? Non-ambiguity of “welfare message”: Does everybody agree that “more is better”, or vice versa?
- **Accountability:** Does the indicator/index point at those who should be held responsible?
- **Robustness/ independence of assumptions:** Could the value of the indicator change drastically by fumbling with some assumptions?
- **Measurability, data availability:** Will we see comparable figures in the next ten years?

## Implications for selecting indicators for Scotland’s NPF

The criteria set out above set a relatively high bar for the current practice on measuring PCD/PCSD using indicators. While we have found a wide range of



reports on PCD/PCSD frameworks and procedures, only two provide a coherent approach to setting out baskets of indicators that could be used to track progress. These are set out below.

#### King and Matthews indicators for PCD in Ireland

Using their own design criteria, King and Matthews set out a set of indicators that they recommended to the Irish Government as a method to track their PCD progress. These reflect the key areas of Irish Government's interests and in many ways are similar to the components used in CGD CDI.

**Trade Policy Indicators**

- T.1.1 Average Tariffs on Manufacturing Imports, 2010.
- T.1.2 Share of Duty-Free Imports, 2009.
- T.1.3 Trade Restrictiveness Indicators for Manufactured Goods, 2009.
- T.1.4 Trends in Import Growth Rates, 2007-2009.
- T.2.1 EU and Irish Trade Preference Utilisation, 2009.
- T.3.1 ODA Expenditure on Trade Policies & Regulations, % of 2008 GDP.

**Agriculture policy Indicators**

- A.1.1 Average Tariff on Agricultural Imports, 2010.
- A.1.2 National Levels of Market Price Support, 2009.
- A.1.3 Trade Restrictiveness Indices for Agricultural Goods, 2009.
- A.1.4 Growth in Agricultural Imports from Developing Countries, 2007-2009.
- A.2.1 Trade-distorting Support, 2007.
- A.3.1 Agricultural ODA Expenditure, 2008.

**Fisheries Policy Indicators**

- F.1.1 Ireland's Participation in International Agreements on Fisheries Protection, 2010.
- F.1.2 DAC Country Compliance Scores for FAO (UN) Code of Conduct for Responsible Fisheries, 2006.
- F.2.1 Average MFN and Applied Tariffs on Fish and Fish Products, 2008.
- F.3.1 Government Financial Transfers to Fisheries Sector, as a % of the Total Landed Value, 2007.
- F.4.1 Ireland's Industrial Pelagic Fishing Possibilities in Morocco, 2007-2011.
- F.4.2 FAO (UN) Code of Conduct for Responsible Fisheries, Compliance Scores for FPA Countries, 2006.
- F.4.3 Marine Protected Areas, % of Country's Exclusive Economic Zone, 2010.
- F.4.4 Ireland's Contribution towards Fisheries Capacity Building in Developing Countries, 2008.

**Migration Indicators**

- M.1.1 Non-DAC Inflow as a Percent of Total Population, 2008.
- M.1.2 Number of Residents in Ireland from Different Regions of the World, 2006.
- M.1.3 Country of Origin of African Migrants into Ireland, 2006.
- M.2.1 Support for Remittances to Developing Countries, 2010.
- M.3.1 Total UNHCR Population of Concern + Applications/ Billion USD of GDP, 2010.
- M.4.1 Ratio of Tuition Fees for non-DAC students to DAC students and Irish Students, 2004.
- M.4.2 Proportion of non-DAC (to total) students in tertiary education, 2007.

**Environment Indicators**

- E.1.1 Environmental Protection ODA (Commitment), 2008.
- E.2.1 Average Annual Growth Rate of GHG Emissions/PPP GDP, 1997-2007.
- E.2.2 Performance in Meeting Kyoto Protocol Targets, 2008.
- E.2.3 ODA Expenditure on Climate Change, 2008 (Second Rio Marker).
- E.2.4 ODA Expenditure on Desertification, 2008 (Third Rio Marker).
- E.3.1 ODA Expenditure on Biodiversity (Disbursement), 2008 (First Rio Marker).
- E.3.2 Adoption of Convention of Biological Diversity and Related Protocol, 2010.
- E.4.1 MFN Tariffs on Bioethanol, 2010.
- E.4.2 Subsidies for Liquid Biofuels (Ethanol and Biodiesel), Most Recent Year.

**Finance and Enterprise Policy Indicators**

- FE.1.1 ODA Expenditure on Debt Relief, 2007- 2008.
- FE.2.1 Existence of Double Taxation Agreements with Irish Aid Priority Countries, 2010.
- FE.3.1 Level of foreign bribery enforcement in OECD Convention Countries, 2011.
- FE.4.1 Restrictions on the Flow of Technology to Developing Countries, 2010.

**Security Policy Indicators**

- S.1.1 Peacekeeping Contribution, UN-run Operations, Progressively Weighted to the Present, 1993-2009.
- S.1.2 Peacekeeping Contribution, Non UN-run Operations, Progressively Weighted to the Present, 1993-2009.
- S.1.3 Expenditure on Security System Management and Reform, 2008.
- S.1.4 Participation in Four Essential Security International Treaty and Related Policies, 2010.
- S.2.1 Exports of Major Conventional Weapons, 2008.

**Development Aid Indicators**

- DA.1.1 Level of Overseas Aid (ODA), 2010.
- DA.2.1 Irish Aid Partner Country GNI per capita, 2008.
- DA.2.2 Governance Quality, Kaufman and Kraay Government Effectiveness Scores, 2009.
- DA.2.3 Corruption Levels, Kaufman and Kraay Control of Corruption Scores, 2010.
- DA.2.4 Economic Management Quality, 2010.
- DA.2.5 Strength of Social Inclusion Policies, 2008.
- DA.3.1 % of Aid Flows Disbursed for Government Sector, 2007.
- DA.3.2 ODA Expenditure Lost to Tied Aid, 2009.

Many of the indicator categories cover policy areas that remain reserved matters for Scotland and as noted above, these categories closely reflect the CDI components and so do not directly address a number of the policy themes we are seeking to capture.

## PCDI (Policy Coherence for Development Index)

The Policy Coherence for Development Index (PCDI)<sup>41</sup> is a tool designed to measure, evaluate and compare countries' commitment to sustainable, fair and equitable human development. The concept of Policy Coherence for Development (PCD) originally emerged in the early 1990s from the realisation that non-aid policies of donors affect developing countries and should not distract but rather be supportive of international development goals. The PCD concept initially emphasised the responsibility of developed countries to consider the effect on developing countries when formulating domestic policies across different sectors (trade, finance, migration, security, technology, science).

As the concept evolved, the PCDI has been developed to go beyond a 'do no harm' approach, also with a requirement to seek synergies between development co-operation and other policies as well as to correct existing incoherencies.

The PCDI analyses both the policies that make a positive contribution to a country's sustainable development and those that hinder it, not only within that country but also in third countries or on the planet as a whole. The PCDI is divided up into five components: economic, social, global, environmental and production.

Knoll (2014) reviewed 20 different policy domains through four different dimensions: environment, economic, social and political and grouped them together in five components based on their similarities and to provide a categorisation that was more accessible to decision-makers.

Economic Component	Fiscal Financial
Social Component	Education Health Social Protection Equality Employment Science & technology
Global Component	Peace & security Co-operation Justice & human rights Human mobility & migration
Environmental Component	Energy Biodiversity Fisheries Rural & agricultural development
Production Component	Industry Infrastructure & transport Tourism Urban Planning

Source PCDI Report Chapter 4 p129.

Indicators were selected for each element of the matrix based on data from 234 countries and an initial set of 201 indicators. The removal of missing data reduced the dataset to 133 countries and 133 variables. These were then further reviewed using factor analysis to produce a list of 49 variables for 133 countries with six indicators in the economic component, nineteen in the social, ten in the global, eight in the environmental and six in the production component. These were organised into 31 indicators that promote policy coherence (such as inequality reduction, public spending on social protection and ratification of universal justice treaties) and 18 indicators that are contrary to sustainable development processes (such as school dropout rates, military spending and ecological footprint). The PCDI is an index and in a similar method to CDI, standardises the degree of change across variables and weights their influence before combining them for an overall score.

Of the 49 variables, 18 reflected indicators contrary to sustainable development processes, whereas the other 31 reflected indicators that favoured them.

The preparation of the variables involved the following actions<sup>42</sup>:

- Grouping of countries: the countries were grouped into 6 groups:
- Group 1: OECD countries, accession countries and countries with enhanced cooperation;
- Group 2: South
- Group 3: Latin America
- Group 4: Europe and Central Asia
- Group 5: Sub-Saharan Africa
- Group 6: Middle -East and North Africa
- Exclusion of variables with high missing values (>40% and some with >30%) following the priority of each variable and the number of rem each policy.
- Grouping of categorical variables (1/0) into a scale variable
- Elimination of variables with high correlations among them variables are related that two or more of them are quantifying the same information, therefore they may reduce the reliability of the index. This may induce a double count in the aggregation step, reducing the reliable the use of statistical methods necessary
- An analysis of outliers was carried out for each variable with a Boxplot analysis. To perform this analysis, all the variables were reviewed and the outliers that appeared were replaced by another value based on statistical criteria (e.g. the highest non-outlier variable, the median value, etc.) and logical interpretation criteria.
- A Min-Max normalisation was applied to normalise the variables to follow a range between 0 and 1 (or between 0 and 100)
- The classification of variables into those which support a country's development and those that hinder a country's development.

The result of this process produced the set of variables outlined in table C.2:

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<sup>42</sup> DevStat (2015) Development of a Policy Coherence for Development Index: Methodology for the development of the PCDI.

Table C.2: Overview of PCDI variables

Dimension	PCDI Variables that contribute	PCDI variables that hinder
<b>Economic component</b>	<ul style="list-style-type: none"> <li>• FIS1 Tax revenue (%GDP)</li> <li>• FIS3 Variation rate of the Gini Index pre and post taxes and transfers (%)</li> <li>• FIS5 Environment protection expenditure (% GDP)</li> </ul>	<ul style="list-style-type: none"> <li>• F2 Bank assets (%GDP)</li> <li>• F5 External service, total debt (TSD,US \$ at current prices / Exports of goods and services (US \$ at current prices)</li> <li>• FIS6 Financial Secrecy Index</li> </ul>
<b>Social component</b>	<ul style="list-style-type: none"> <li>• EDU5 Survival rate to the last grade of education, both sexes (%)</li> <li>• EDU11 Net enrolment rate, primary, gender parity index (GPI)</li> <li>• PS1 Public social protection</li> <li>• PS5 Share of population above statutory pensionable age receiving an old age pension</li> <li>• PS8 Benefits incidence</li> <li>• IG5_6_7 Legislation against harassment and against marital rape</li> <li>• IG11 Mandatory minimum leave (in calendar days)</li> <li>• IG14 Position shown at the initiative of the UN in favour of the LGBT</li> <li>• S2 Health life expectancy</li> <li>• S3 Total density per 100,000 population: hospitals</li> <li>• S11 Improved sanitation facilities with access)</li> <li>• CIT6 Enrolment ratio of female with respect to male in tertiary education</li> <li>• CIT13 Percentage of graduates from tertiary education who are female (%)</li> </ul>	<ul style="list-style-type: none"> <li>• EDU2 Rate of out-of school children of primary age, both sexes (%)</li> <li>• EDU8 Pupil-teacher ratio in pre-primary education</li> <li>• EDU9 Pupil-teacher ratio in primary education</li> <li>• EDU14 Repetition rate in primary education (all grades), both sexes (%) Benefits incidence in poorest quintile (%)</li> <li>• IG2 Unpaid family workers (% of female employment)</li> <li>• EM6 Difference of vulnerable Employment between women and men (%)</li> </ul>
<b>Global component</b>	<ul style="list-style-type: none"> <li>• J4_5 Legality of homosexuality and of equal marriage</li> <li>• J6 Participation in the ratification of international treaties of the UN about human rights (%)</li> <li>• J8 Universal jurisdiction</li> <li>• J9 Ratification of UN treaties on International Justice</li> <li>• J13 Does a woman's testimony carry the same evidentiary weight in court as a man's?</li> <li>• J14 Can a married woman convey citizenship to her non-national spouse in the same way as a man?</li> <li>• J15 Are married women required by law to obey their husbands?</li> </ul>	<ul style="list-style-type: none"> <li>• PYS1 Military Expenditure (% GDP)</li> <li>• PYS3 Military personnel (per 100.000 inhabitants)</li> </ul>

	<ul style="list-style-type: none"> <li>• PYS6 International treaties about weapons</li> <li>• M4_5 Convention relating to the status of refugees and International Convention on the protection of the Rights of all members of their families</li> <li>• C3 Existence of a specific structure of cooperation an appreciation of its political rank</li> </ul>	
<b>Environmental component</b>	<ul style="list-style-type: none"> <li>• P2 Artisanal fishing opportunities</li> <li>• P4 Clean waters</li> <li>• P6 Biodiversity</li> <li>• P9 Participation in treaties, conventions and agreements on fishing %</li> </ul>	<ul style="list-style-type: none"> <li>• DR9 Use of fertilizers</li> <li>• B2 Ecological footprint by production (gha per person)</li> <li>• EN2 Ecological footprint of imports (gha per person)</li> <li>• EN4 Metric tons of carbon dioxide per person</li> </ul>
<b>Industry and infrastructure component</b>	<ul style="list-style-type: none"> <li>• IT3 Improved water supply (% population with access)</li> <li>• IT4 Access to electricity (% of population)</li> <li>• IN1 R&amp;D (%GDP)</li> </ul>	<ul style="list-style-type: none"> <li>• T1 International tourist arrivals (% of the population in the host country)</li> <li>• IN5 Annual freshwater withdrawals, industry (% of total freshwater withdrawal)</li> <li>• IN8 Difference between male and female employment in the industrial sector (%)</li> </ul>

These variables can be mapped to Scotland's five key policy areas. The full mapping is provided in Annex B but in summary the mapped variables comprise:

- Climate change – variables comprise environmental protection expenditure (% GDP); ecological footprint by production (gha per person); ecological footprint of imports (gha per person); and metric tons of carbon dioxide per person.
- Equality – a variety of variables are included. These comprise economic variables, the Gini Index, social variables, gender and education; LGBT policies; pension provision and benefit incidence; and global variables in relation to human rights.
- Education – variables include enrolment rates for males and females and pupil teacher ratios.
- Determinants of health – variables include healthy life expectancy, hospital density and various environmental components such as clean waters and use of fertilisers.



- Justice – variables are split between social components; public social protection and legislation against harassment and global components including the ratification of UK treaties on international justice.

# ANNEX D Process for Selecting Indicator components

## ***Assessing data availability for the indicator components***

A primary constrain on the 25 suggested indicator components is whether there are robust and accessible data sources that are regularly updated so change over time can be tracked. We also needed to consider the design criteria set out for the development of the NPF indicator, in particular:

- A measure for Scotland, not just the Scottish Government.
- Largely focused on those policy areas where Scotland has devolved responsibility.
- Based on transparent and international data sources that can be updated in a timely fashion and with minimal cost, so that Scotland's progress can be assessed on a regular basis.
- Provide an indicator for Scotland that can be compared over time and is not dependent on comparison with other countries.
- Be a cardinal indicator where changes in value relate as directly as possible to changes in policy coherence. There is limited value in selecting an indicator that is not dynamic or is already at a high level and has limited capacity to change.
- Wherever possible not replicate an indicator already part of the NPF.

Discussions with the Scottish Government also confirmed that indicators that required a series of judgements on policy characteristics (such as the MIPEX indicators of migration policy) would also be excluded as these require expert judgement, be potentially open to challenge and require significant resources to update on an annual or bi-annual basis.

The following table sets out the reasons for inclusion or exclusion of the proposed indicator components in more detail.

Table D.1: Reasons for inclusion/exclusion of indicator components

Measure	Reasons for inclusion/ exclusion	Comments
Scotland's connectedness to ODA recipient countries	<b>Included</b>	Importance of partnership working stressed by most stakeholders but significant challenges in agreeing a simple indicator and securing data without undertaking a bespoke survey
Civic/ Citizenship engagement on International Development	Not available for Scotland and would require additional questions to be added to the Social Attitudes Survey and so cost rules out inclusion.	Important measure but obtaining a robust measure for Scotland would be expensive
Value contribution of individual expertise	Expert contribution vital to policy coherence but no single measure can capture range of inputs	A measure that has challenged existing indices such as CDI. Cost of collection a major barrier.
School involvement in international learning	Important measure of engaging Scottish young people in ID issues	All schools required to participate in activity so measure of engagement is meaningless. Cost of bespoke survey of young people's attitudes rules out indicator of change in perceptions.
CPD impact on domestic service	Number of services engaged in partnership work highlighted the impact on individuals who volunteer/work as experts who then re-apply this knowledge to their work in Scotland	Challenge to represent such impacts in a single measure across a wide range of service areas. Would require a bespoke survey and so ruled out on cost grounds
CDI indicator – integration policies (MIPEX)	International set of criteria to assess migration policies' impact on integration of migrants/ asylum seekers	Excluded on grounds that it requires expert judgement of policies many of which are reserved.
Asylum seekers settled in Scotland per 100,000 population	<b>Included:</b> Broad measure of Scotland's openness to a diverse and inclusive society	Included as data is available from National Statistics.
HE Students from DAC Least Developed Countries / Total Non-EU Students	<b>Included:</b> Core measure of engagement in HE. HEIs stressed importance of diverse student body for future income streams from foreign students. Wider point that Scottish alumni help 'soft power' and partnership working. Also a common measure in other nation's assessment of policy coherence.	Included as data available from HESA.

Measure	Reasons for inclusion/ exclusion	Comments
Contribution of Scottish people to DEC appeals per capita	Measure of public engagement in humanitarian issues especially countries facing emergencies	Robust data for Scotland is not available and focus on DEC appeals mean that the measure would be partial. Exclude.
% of total waste exported	<b>Included:</b> Measure of Scotland's ability to address its own waste without relying on other countries to pick up the burden	SEPA measure for proportion of waste exported but a more appropriate indicator is % treated domestically. Included.
Metric tonnes of carbon per person	Measure of Scotland's carbon footprint but already included elsewhere in NPF	Excluded to avoid duplication with other NPF measure
Ecological footprint of imports (gha per person)	Measure of Scotland's carbon footprint but already included elsewhere in NPF	Excluded to avoid duplication with other NPF measure
Value of imports from ODA countries	<b>Included:</b> Direct measure of the degree to which Scotland provides access to ODA products	Included. Data on goods imports by country available from HMRC.
Value of Agricultural subsidies	<b>Included:</b> Key measure from both CDI and PCDI indices and devolved responsibility	Included/ Annual report by Scottish Government.
SDI R&D Funding for Innovation Projects in ODA countries	Unable to establish the range of activity included in this pathway	Excluded no data available
Variation rate of the Gini Index pre and post taxes and transfers	Unclear how this measure in Scotland would impact on policy coherence	Excluded. Measure of income disparities already included in NPF
% of international development funding targeted at vulnerable groups	<b>Included:</b> Measure of the concentration of aid expenditure on vulnerable groups	Include. Data from Scottish Government
Value of R&D contracts in HEIs with ODA-eligible nations	<b>Included:</b> Measure of the research collaboration with institutions based in ODA countries. Reflecting the range of projects and collaboration undertaken by Scottish HEIs	UKRI Gateway to Research data covers all research councils and GCRF and Newton Funds
PCDI - S2 Health life expectancy	Measure tbc	

Measure	Reasons for inclusion/ exclusion	Comments
Value of the Low Carbon and Renewable Energy Economy (LCREE) in Scotland	<b>Included:</b> Captures the extent of Scottish expertise in renewable technologies.	Included. Large scale survey undertaken biennially provides robust estimate for Scotland.
Energy produced from renewable sources	Already included elsewhere in NPF	Excluded as duplicated elsewhere.
Water management	Limited ID activity so measure excluded	
Nº of ODA countries supported by Police Scotland	Simple measure that captures the range of work undertaken by Police Scotland	Include, more complex measures do not have the source data to support their inclusion
No of prosecutions arising from bi-lateral investigations	Key part of PS activities is joint criminal investigations e.g. modern slavery targeting criminals in both Scotland and ODA countries	Exclude no source data

## Creating a composite indicator for the NPF

The ultimate objective of this assignment has been to identify a number of relevant indicators that together provide a practical measure of Scotland's contribution to the development of other nations. For the purposes of the National Performance Framework (NPF), this measure needs to be a single composite indicator. So the final stage of this process is to determine how this should best be achieved using international best practice.

This review has looked closely at the design and methodology underpinning two indices that measure the commitment of countries to international development. The Center for Global Development Contribution to Development Index (CDI) and the Policy Coherence for Development Index (PCDI) both contain indicators with relevance to Scotland.

The third major measure of international development is the United Nations Human Development Index (HDI) used by the United Nations Development Programme. The HDI is an index of life expectancy, education and per capita indicators, which are used to rank countries into four tiers of human development (Very high, High, Medium and Low). These indicators are primarily focused on measurement of development rather than the various conditions that promote the beyond aid agenda and so are less relevant to Scotland's contribution to the development of other nations.

Although it has not been possible to adopt any of the available international methodologies – CDI, PCDI the HDI – in their entirety, we have drawn on their respective approaches to developing an index to ensure that the proposed indicator builds on existing international best practice.

There is no standard methodology for combining different performance measures into a single index. There are, however, a number of stages to the process common to these three main indices. These are:

- Techniques for addressing any missing values and data outliers
- Standardised performance measures to be able to combine values so that they reflect degree of change
- Combine these using weights to reflect relative importance in contribution to international development
- The methodologies adopted for each index are reviewed and assessed for their relevance to the design criteria for the NPF indicator in turn below.

## **Treatment of missing values and data outliers**

The three indices have a similar two-stage approach to the treatment of missing values:

- If the majority of data points have missing values, then the country in question is excluded from the analysis entirely. CDI for example focuses on the G20 countries on the grounds that most data is available for this group.
- For single (or a small number of indicators) missing data points often use a proxy value – most often the average of values for that indicator from similar countries (e.g. HDI would take the average for low income countries to act as a measure for another low income country with a missing value; similarly PCDI uses the geographic groupings to calculate an average value).

Both CDI and PCDI use the range of data for countries to identify potential data outliers. An outlier is an observation that lies an abnormal distance from other values in a random sample from a population. The outliers often represent a measurement error or a highly atypical country and their inclusion in the statistical analysis may distort the analysis, particularly in the normalisation process of the variables. Each of the indices use statistical analysis techniques associated with average values and standard deviations to determine whether a variable value is outside the normal range and should therefore be excluded.

The availability of data for specific indicators for Scotland is already a consideration in their selection and so there is no need to adopt a missing value methodology. However, it is important to note that neither of these approaches could be adopted as they rely on comparative data being collected on other countries.

## Normalisation methods

Different variables represent change using different scales (for example the proportion of all non-EU students from ODA countries and the value of imports from ODA countries). In order to combine these variables it is necessary to normalise (standardise) their scales. Each of the reviewed indices uses slightly different techniques to achieve this:

- CDI normalises using a standard statistical technique. Each country's raw score is standardised as a Z score, with a mean of 5 and standard deviation of 1 (so the vast majority of scores are between 3 and 7). Some variable scores are standardised negatively, which means a lower raw score translates into a higher standardised score. This is true of negative factors such as arms exports or greenhouse gas emissions. It is important to recognise that this process is reliant on having multiple observations of the same variable from a range of countries.
- PCDI uses a Min-Max normalisation that transforms the variable values against a range between 0 and 1 (or between 0 and 100), which imply subtracting the minimum value to the observation and dividing by the range of the values of the variables. The majority of these are set by the observed values of the indicators<sup>43</sup>.
- HDI uses a similar Min-Max approach with these lower and upper values acting as the "natural zeros" and "aspirational targets," respectively, from which indicator components are standardised. However, in a number of cases, the Min and Max values are set by external research and so do not vary according to the observed values. So, on the HDI income variable the lower value \$100 and the upper \$75,000 with the minimum being based on research and the upper set as a notional cut-off point. Each dimension (health, education, income) has an index calculated as  $\text{actual value} - \text{minimum value} / \text{maximum value} - \text{minimum value}$ .

The issue raised by the min-max method for Scotland is what values determine the minimum and maximum values for each variable. CDI, PCDI and HDI use a mix of observed values (i.e. the minimum and maximum values for the variable among the countries for which data is being collected) and

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<sup>43</sup> It is also worth noting that this method must introduce a degree of inconsistency between years as changes in the upper and lower values would deliver changes in the normalised indicator even where the indicator did not itself change value.

research-based or assumed values. The HDI concept of using an ‘aspirational’ upper value might be one way forward as this allows for some policy intent and would enable an equivalent process to function when there is only data for one country.

Again, comparative variable values are fundamental to these approaches and would, therefore, not conform to the Scottish Government design criteria for the NPF. Moreover, these approaches imply that a country’s index is dependent on the values of comparative countries. Changes in these comparators will alter the value of the index even if the country’s indicators values stay the same.

## Weighting and Combining indicators

All three indices combine the normalised variables into a single value. Each index uses a slightly different approach:

- CDI weights variables according to the evidence and their judgement on the contribution to development. These are not applied at the top component level – Aid, Finance, Technology, Environment, Trade, Security and Migration, that are combined as a simple average, but through the combination of sub-components and variables within sub-components<sup>44</sup>.
- PCDI combines variables using a weighted average of the variables that firstly, contribute to development support or secondly, hinder development support. The weights are the coefficients of a regression model that reflect the contribution of the specific variable to development impact (e.g. GDP growth). These are then combined according to weights ascribed by PCDI that reflect the ability to design and implement policies consistent with development. These weights are determined by the PCDI authors and are set out below.

	Economic component	Social component	Global component	Environmental component	Industry and infrastructures component
Assigned Weight	3	1	2	3	1

- HDI adopts a two-stage process. Firstly, the individual indicators are combined using either arithmetic or logarithmic averages. Secondly, the resultant domain indices are combined using a geometric average. The advantage of a geometric average is that the geometric mean does not

<sup>44</sup> The pattern of weighting is described in Annex B and a detailed description of the weighting methodology can be found in Roodman (2013) The Commitment to Development Index: 2013 Edition, Center for Global Development, September 2013.



allow significant changes in one indicator to dominate the index as a whole and so measures with very different scales can be combined.

In essence then, both CDI and PCDI contain an element of expert judgement in the application of the relative importance of different variables on the development process. In relation to the weights applied to reflect the ability to design and implement policies consistent with development, these are predominately based on expert assessment.

This suggests that the most straightforward approach is that the NPF indicator takes a year-on-year change in the combined indicator components as a measure of progress. This would work by the first year of the NPF indicator having a value of 100 and then subsequent measures would move in line with percentage change on this baseline value – for example, a 4% increase would provide a value of 104 and a 4% decline 96%.

Finally, this leaves the question of whether the individual pathways in the indicator should be given different weight in calculating the overall contribution to the development of other nations. Both CDI and PCDI have adopted expert judgement in providing differential weights to their elements. These have been criticised in the literature as being opaque and difficult to interpret. We recommend that no weighting be applied to the different pathways in the indicator at this stage, simply because we can find no robust evidence to suggest that any one element is more important than another. Should such evidence become available in the future then this recommendation should be revisited.

Table D.2: Proposed indicators and data sources for the NPF indicator Contribution of development support to other nations

Pathway – What this means for contribution to development of other nations	Suggested Indicator components	Pros	Cons	Data Availability	Inclusion/exclusion	Reason
We work with partners to build capacity and engage in dialogue on development and human rights	<ul style="list-style-type: none"> <li>Scotland's connectedness to ODA recipient countries</li> <li>Civic/ Citizenship engagement on International Development</li> <li>Value contribution of individual expertise</li> <li>School involvement in international learning</li> <li>CPD impact on domestic service</li> </ul>	<ul style="list-style-type: none"> <li>Simple quantitative measure that can aggregate Scotland's different types of connections to ODA recipient countries</li> <li>Wider assessment of Scottish engagement</li> <li>Capture scale of investment</li> <li>Take up of international development learning in schools</li> <li>Real benefit from expertise/</li> </ul>	<ul style="list-style-type: none"> <li>Narrow input measure</li> <li>May not conform to expectations e.g. ScotCen report on attitudes to migrants</li> <li>Will not capture outputs/ outcomes which may be unrelated to scale of input</li> <li>An input measure not capturing outputs on attitudes</li> <li>Not measurable in</li> </ul>	<ul style="list-style-type: none"> <li>Yes</li> <li>Need to add questions in Social Attitudes Survey.</li> <li>No current indicator but discussions with CGD</li> <li>Unclear whether all schools are required to deliver rendering take-up measure meaningless</li> <li>Attributing change through</li> </ul>	<ul style="list-style-type: none"> <li>Include</li> <li>Exclude</li> <li>Exclude</li> <li>Exclude</li> <li>Exclude</li> </ul>	<ul style="list-style-type: none"> <li>Central to Scottish contribution to ID process</li> <li>Would require additional questions in the Social Attitudes Survey and there is no resource for this</li> <li>No single measure identified but may be possible to include more specific measures for health, education, justice</li> <li>All schools required to deliver so measure is meaningless</li> <li>Not measurable in a single indicator</li> </ul>

Pathway – What this means for contribution to development of other nations	Suggested Indicator components	Pros	Cons	Data Availability	Inclusion/exclusion	Reason
		volunteer programmes	a single indicator	a single indicator a challenge		
We support migrant and asylum seeker populations coming to Scotland	<ul style="list-style-type: none"> <li>• CDI indicator – integration policies (MIPEX)</li> <li>• Asylum seekers settled in Scotland per 100,000 population</li> </ul>	<ul style="list-style-type: none"> <li>• Standard set of indicators</li> <li>• Standard measure</li> </ul>	<ul style="list-style-type: none"> <li>• Need to rate answers to a number of qualitative questions. May not change</li> <li>• Not clear what the additional impact of more positive migrant welcome has on UK determined numbers</li> </ul>	<ul style="list-style-type: none"> <li>• Available but need resource to undertake annual assessment</li> <li>• Scotland may already be high and may have limited room for improvement</li> </ul>	<ul style="list-style-type: none"> <li>• Exclude</li> <li>• Include</li> </ul>	<ul style="list-style-type: none"> <li>• Underlying criteria for MIPEX relate to UK policy choices not Scotland's.</li> <li>• Simple measure of Scotland's attractiveness to asylum seekers</li> </ul>
We welcome students from developing countries to our educational institutions	<ul style="list-style-type: none"> <li>• HE Students from DAC Least Developed Countries / Total Non-EU Students</li> </ul>	<ul style="list-style-type: none"> <li>• Definitive measure of engagement in ODA countries</li> </ul>	<ul style="list-style-type: none"> <li>• HE providers only as SFC FE data not available by individual country.</li> </ul>	<ul style="list-style-type: none"> <li>• Annual Data for HE providers in Scotland annually Academic year 2017/18 Scotland 2.7%</li> </ul>	<ul style="list-style-type: none"> <li>• Include</li> </ul>	<ul style="list-style-type: none"> <li>• Direct measure of Scotland's HE provision to ODA countries</li> </ul>
We support other nations in humanitarian emergencies. Reducing humanitarian needs	<ul style="list-style-type: none"> <li>• Humanitarian emergency spend</li> </ul>	<ul style="list-style-type: none"> <li>• Simple measure of contribution</li> </ul>	<ul style="list-style-type: none"> <li>• Financial input to support not a reflection of PCD</li> </ul>	<ul style="list-style-type: none"> <li>• Accessible from SG accounts but this would not include</li> </ul>	<ul style="list-style-type: none"> <li>• Exclude</li> </ul>	<ul style="list-style-type: none"> <li>• Financial input to support not a reflection of PCD and other funding explicitly excluded from measures ent</li> </ul>

Pathway – What this means for contribution to development of other nations	Suggested Indicator components	Pros	Cons	Data Availability	Inclusion/exclusion	Reason
	<ul style="list-style-type: none"> <li>Contribution of Scottish people to DEC appeals per capita</li> </ul>	<ul style="list-style-type: none"> <li>Measure of public engagement in development</li> </ul>	<ul style="list-style-type: none"> <li>May not be accessible</li> </ul>	<ul style="list-style-type: none"> <li>donations by Scottish people</li> <li>Data held by DEC unpublished</li> </ul>	<ul style="list-style-type: none"> <li>Exclude</li> </ul>	<ul style="list-style-type: none"> <li>DEC data a measure of public engagement</li> </ul>
We avoid contributing to climate change and environmental damage internationally	<ul style="list-style-type: none"> <li>% of total waste exported (SEPA)</li> <li>Metric tonnes of carbon per person</li> <li>Ecological footprint of imports (gha per person)</li> </ul>	<ul style="list-style-type: none"> <li>Direct measure of Scotland's recycling capacity</li> <li>Simple measure of Scotland's carbon credentials</li> <li>Direct measure of Scotland's carbon impact overseas</li> </ul>	<ul style="list-style-type: none"> <li>Time lag in availability</li> <li>Does not capture carbon in imports</li> <li>None</li> </ul>	<ul style="list-style-type: none"> <li>SEPA data 14.4% (2016)</li> <li>Annual update available</li> <li>Already reported in annual GHG reports</li> </ul>	<ul style="list-style-type: none"> <li>Include</li> <li>Exclude</li> <li>Exclude</li> </ul>	<ul style="list-style-type: none"> <li>Direct measure of Scotland's ability</li> <li>Already captured in NPF</li> <li>Useful measure but unclear how this is amenable to Scottish policy action</li> </ul>
We trade and invest fairly	<ul style="list-style-type: none"> <li>Value of imports from ODA countries</li> <li>Agricultural subsidies</li> </ul>	<ul style="list-style-type: none"> <li>Direct measure of the value of trade</li> <li>Agricultural subsidies a key measure of fair access for ODA countries</li> </ul>	<ul style="list-style-type: none"> <li>Not currently available</li> <li>Narrow and do not necessarily relate to export sectors of ODA countries</li> </ul>	<ul style="list-style-type: none"> <li>No current measure of imports</li> <li>SG Budget accounts</li> </ul>	<ul style="list-style-type: none"> <li>Include</li> <li>Include</li> </ul>	<ul style="list-style-type: none"> <li>Direct measure of economic engagement with ODAs</li> <li>Devolved responsibility</li> </ul>
	<ul style="list-style-type: none"> <li>Value of arms exports</li> </ul>	<ul style="list-style-type: none"> <li>Frequently used measure of do no harm</li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>	<ul style="list-style-type: none"> <li>No Scotland-level disaggregated</li> </ul>	<ul style="list-style-type: none"> <li>Exclude</li> </ul>	<ul style="list-style-type: none"> <li>Not currently possible to measure Scotland's contribution to arms</li> </ul>

Pathway – What this means for contribution to development of other nations	Suggested Indicator components	Pros	Cons	Data Availability	Inclusion/exclusion	Reason
				data currently available		component manufacture
We support social enterprise, investment, innovation internationally	<ul style="list-style-type: none"> <li>SDI R&amp;D Funding for Innovation Projects in ODA countries</li> </ul>	<ul style="list-style-type: none"> <li>Measure of innovation support in ODA countries</li> </ul>	<ul style="list-style-type: none"> <li>Broad range of activity to capture in single indicator</li> </ul>	<ul style="list-style-type: none"> <li>SDI/ SE tbc</li> </ul>	<ul style="list-style-type: none"> <li>Exclude</li> </ul>	<ul style="list-style-type: none"> <li>No data collated on this activity</li> </ul>
We work to reduce poverty We promote equality and human rights	<ul style="list-style-type: none"> <li>Variation rate of the Gini Index pre and post taxes and transfers</li> <li>% of international development funding targeted at vulnerable groups</li> </ul>	<ul style="list-style-type: none"> <li>Already an NPF measure</li> <li>Direct input measure</li> </ul>	<ul style="list-style-type: none"> <li>Unclear what is the link to ID</li> <li>Only measures input</li> </ul>	<ul style="list-style-type: none"> <li>Cross-reference to NPF</li> <li>SG data on annual spent on IDF projects: Percentage of total IDF spending that the sum of projects that report or should report on protected characteristics represent.</li> </ul>	<ul style="list-style-type: none"> <li>Exclude</li> <li>Include</li> </ul>	<ul style="list-style-type: none"> <li>Unclear what is the link to Beyond aid agenda</li> <li>Direct measure of the targeting of support on the most vulnerable</li> </ul>
We promote knowledge exchange and share the experience and expertise of our public, private and community sectors	<ul style="list-style-type: none"> <li>Value of R&amp;D contracts in HEIs with ODA-eligible nations</li> </ul>	<ul style="list-style-type: none"> <li>A direct measure of engagement</li> </ul>	<ul style="list-style-type: none"> <li>Only partial capture of range of activity</li> </ul>	<ul style="list-style-type: none"> <li>UKRI Gateway to Research database</li> </ul>	<ul style="list-style-type: none"> <li>Include</li> </ul>	<ul style="list-style-type: none"> <li>UKRI Gateway to Research measure of research project spend involving partners in ODA countries</li> </ul>

Pathway – What this means for contribution to development of other nations	Suggested Indicator components	Pros	Cons	Data Availability	Inclusion/exclusion	Reason
We work to improve health outcomes	<ul style="list-style-type: none"> <li>PCDI - S2 Health life expectancy</li> <li>NPF Health Risk Behaviours</li> </ul>	<ul style="list-style-type: none"> <li></li> <li></li> </ul>	<ul style="list-style-type: none"> <li></li> <li></li> </ul>	<ul style="list-style-type: none"> <li>No data currently available</li> <li>No data currently available</li> </ul>	<ul style="list-style-type: none"> <li>Exclude</li> <li>Exclude</li> </ul>	<ul style="list-style-type: none"> <li>Data</li> <li>Data</li> </ul>
We support climate change mitigation/adaptation and environmental protection/restoration	<ul style="list-style-type: none"> <li>Value of the Low Carbon and Renewable Energy Economy (LCREE) in Scotland £11.1bn in 2017.</li> <li>Energy produced from renewable sources</li> <li>Water management</li> </ul>	<ul style="list-style-type: none"> <li>Reflects Scotland's renewable expertise</li> <li>Reflects specific expertise in wind power</li> <li>Covers different aspects of Scottish expertise</li> </ul>	<ul style="list-style-type: none"> <li>None</li> <li>Duplicates above indicator</li> <li>Unclear of role in ID support</li> </ul>	<ul style="list-style-type: none"> <li>ONS primary measure of the importance of the low carbon economy based on a national survey of just under 24,000 businesses. Latest survey 2018 for 2017 with annual data back to 2015. Published Jan 2019.</li> <li>Cross-reference NPF</li> <li>No measure identified</li> </ul>	<ul style="list-style-type: none"> <li>Include</li> <li>Exclude</li> <li>Exclude</li> </ul>	<ul style="list-style-type: none"> <li>Reflects Scotland's renewable expertise</li> <li>Duplicates above indicator</li> <li>Unclear of role in ID support</li> </ul>
We support fairness under the law	<ul style="list-style-type: none"> <li>Nº of ODA countries supported by Police Scotland</li> </ul>	<ul style="list-style-type: none"> <li>Simple direct measure</li> </ul>	<ul style="list-style-type: none"> <li>Simple measure of input</li> </ul>	<ul style="list-style-type: none"> <li>No data currently available</li> </ul>	<ul style="list-style-type: none"> <li>Exclude</li> </ul>	<ul style="list-style-type: none"> <li>Data</li> </ul>

Pathway – What this means for contribution to development of other nations	Suggested Indicator components	Pros	Cons	Data Availability	Inclusion/exclusion	Reason
	<ul style="list-style-type: none"> <li>No of prosecutions arising from bi-lateral investigations</li> </ul>	<ul style="list-style-type: none"> <li>Demonstrates impact of ID work on justice in Scotland</li> </ul>	<ul style="list-style-type: none"> <li>Narrow measure</li> </ul>	<ul style="list-style-type: none"> <li>Not separately identified in crime statistics</li> </ul>	<ul style="list-style-type: none"> <li>Exclude</li> </ul>	<ul style="list-style-type: none"> <li>Not separately identified in crime statistics</li> </ul>

# ANNEX E DAC List of ODA Recipient Countries

## Least Developed Countries

Afghanistan	Madagascar
Angola	Malawi
Bangladesh	Mali
Benin	Mauritania
Bhutan	Mozambique
Burkina Faso	Myanmar
Burundi	Nepal
Cambodia	Niger
Central African Republic	Rwanda
Chad	Sao Tome and Principe
Comoros	Senegal
Democratic Republic of the Congo	Sierra Leone Solomon Islands
Djibouti	Somalia
Eritrea	South Sudan
Ethiopia	Sudan
Gambia	Tanzania
Guinea	Timor-Leste
Guinea-Bissau	Togo
Haiti	Tuvalu
Kiribati	Uganda
Lao People's Democratic Republic	Vanuatu
Lesotho	Yemen
Liberia	Zambia

Effective for reporting on 2018, 2019 and 2020 flows

Source: [https://www.oecd.org/dac/financing-sustainable-development/development-finance-standards/DAC\\_List\\_ODA\\_Recipients2018to2020\\_flows\\_En.pdf](https://www.oecd.org/dac/financing-sustainable-development/development-finance-standards/DAC_List_ODA_Recipients2018to2020_flows_En.pdf)



# ANNEX F Method for Calculating the Indicator

## Introduction

This section provides the instructions for the calculation of the indicator components and their aggregation into the overall NPF indicator *Contribution of development support to other nations*.

### 1. Asylum seekers settled in Scotland per 100,000 population

National Statistics regional data on number of Asylum seekers in Scotland in receipt of Section 95 support is presented Quarterly. The 30 June figures are used to match mid-year population estimates.

Mid-year population estimates are published annually. Data is available from [www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/population/population-estimates/mid-year-population-estimates](http://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/population/population-estimates/mid-year-population-estimates)

The indicator is derived from:

$$\frac{\text{number of asylum seekers in receipt of Section 95 support on 30 June/}}{100,000} \times \text{mid-year population estimate}$$

The index value for the year is calculated by:

$$\frac{\text{Asylum seeker per 100,000 population in year X/}}{\text{Asylum seekers per 100,000 population in baseline year}} = 67.27 \times 100$$

### 2. HE Students in Scottish Institutions from DAC Least Developed Countries

Higher Education Statistics Agency provide data on HE student enrolments by domicile, level of study, mode of study, region of HE provider and academic year. The pivot data table can restrict region of HE provider to Scotland and covers all HE courses. The data is for academic years. Next update is expected in January 2020. The data can be accessed here:

[www.hesa.ac.uk/data-and-analysis/students/table-11](http://www.hesa.ac.uk/data-and-analysis/students/table-11)

A table including only students from the DAC least developed countries (see Annex E for a list) is produced. A second table for all non-EU students studying HE courses in Scotland is produced and these are combined to produce the proportion of all non-EU students from DAC LDCs:

$$\frac{\text{Number of HE students from DAC least developed countries/}}{\text{Number of all non-EU students studying HE courses in Scotland}}$$

The index value for the year is calculated by:

$$\frac{\text{Proportion of students from DAC LDCs studying in Scotland in year X/}}{\text{Proportion of students from DAC LDCs studying in Scotland in baseline year}} = 2.7\% \times 100$$

### 3. *Proportion of total waste managed in Scotland*

Data on the tonnage of waste from all sources managed by disposal, recycling or recovery in Scotland and on the total waste managed in Scotland and abroad is available from SEPA.

Data can be accessed online here:

[www.environment.gov.scot/data/data-analysis/waste-from-all-sources/](http://www.environment.gov.scot/data/data-analysis/waste-from-all-sources/)

The proportion of all waste managed in Scotland is calculated as:

$$\frac{\text{Total waste managed in Scotland (Tonnes)}}{\text{Total waste managed in Scotland and abroad (Tonnes)}} \times 100$$

The index value for the year is calculated by:

$$\frac{\text{Proportion of all waste managed in Scotland in year X}}{\text{Proportion of all waste managed in Scotland in baseline year}} = 87.2\% \times 100$$

### 4. *Proportion of good imported from least developed ODA countries*

Data on goods imports is available at:

[www.uktradeinfo.com/Statistics/BuildYourOwnTables/Pages/Table.aspx](http://www.uktradeinfo.com/Statistics/BuildYourOwnTables/Pages/Table.aspx)

Data is available for the Value of goods imports from least developed ODA countries in Scotland (£000's). This is expressed as a percentage of goods imported from all non-EU countries. In each case non-specific imports are excluded.

The indicator is calculated as follows:

$$\frac{\text{Goods imports from least developed ODA countries in Scotland (£000s)}}{100} \times$$

$$\frac{\text{Goods imports from all non-EU countries in Scotland (£000s)}}{\text{Goods imports from all non-EU countries in Scotland (£000s)}}$$

The index value for the year is calculated by:

$$\frac{\text{Proportion of imports from least developed ODA countries in Scotland in year X}}{\text{Proportion of imports from least developed ODA countries in Scotland in baseline year}} = 1.7\% \times 100$$

$$\frac{\text{Proportion of imports from least developed ODA countries in Scotland in baseline year}}{\text{Proportion of imports from least developed ODA countries in Scotland in baseline year}} = 1.7\% \times 100$$

### 5. *Total Payments and subsidies to Agricultural production*

Data on the payments and subsidies to agricultural businesses can be sourced here:

[www.gov.scot/publications/total-income-farming-estimates-scotland-2016-18/](http://www.gov.scot/publications/total-income-farming-estimates-scotland-2016-18/)

Table 3: Total Farming Income 2005 to 2018 provides data on the value of payments and subsidies for agriculture in 2018 prices.

The index value for the year is calculated by:

$$\frac{\text{Value of agricultural payments and subsidies in Scotland in year X £m}}{\text{Value of agricultural payments and subsidies in Scotland in baseline year}} = \frac{\text{£489m}}{\text{£489m}} \times 100$$

Given that an increase in the value of agricultural payments and subsidies would imply a negative impact on policy coherence for sustainable development, we invert the index so that an increase in the level of payment and subsidy delivers a reduction in the index:

$$1/\text{index value} = \text{inverse index}$$

6. *Percentage of total IDF spending that the sum of projects that report or should report on protected characteristics represent*

We propose to mirror the protected characteristics under the Equality Act for the definition of 'vulnerable groups', adding relevant categories we already include in the Contribution of development report and found in definitions of vulnerable groups and vulnerability in the international literature. 'Vulnerable groups' are those characterised by age (esp. elderly people as well as children, esp. orphans), disability (mentally or physically disabled), sex (women), gender reassignment (LGBTI), marriage and civil partnership, pregnancy and maternity, race, religion or belief and sexual orientation (LGBTI) and also include: indigenous peoples, people with albinism as well as refugees, asylum seekers, migrant workers, internally displaced and stateless people.

The indicator component is defined as the proportion of annual IDF spending on projects explicitly targeting vulnerable groups as defined by the protected characteristics under Equality Act as well as indigenous peoples, people with albinism and refugees, asylum seekers, migrant workers, internally displaced and stateless people.

Percentage of total IDF spending that the sum of projects that report or should report on protected characteristics represent.

For 2018-2019:

$$\frac{\text{Sum of the value of projects that report/should report on protected characteristics}}{\text{Total value of the Scottish Government's International Development funding}} \times 100$$

The sum in GBP of spending out of the IDF budget of projects that report/should report on protected characteristics is 3.224.798 GBP out of a total of 8.292.750 GBP or 38.88%.

The index value for the year is calculated by:

Percentage of projects that report/should report on protected characteristics of total Scottish Government International Development funding in year 2018-2019 /

Percentage of projects that report/should report on protected characteristics of total Scottish Government International Development funding in baseline year  
= 100%

7. *Percentage of ODA least developed countries research fundin of total research funding*

Data on research funding and collaborator countries can be accessed from Gateway to Research covering all the major UK Research funding sources. Data on research collaborators is only available through application programming interfaces GtR and GtR-2.

The GtR data relates to total research funds awarded to the lead researcher in Scottish Institutions and can identify any research collaborators by country. It is necessary to identify the DAC least developed countries and sum total research awards for these. Funding is taken to be in the year the research project starts. The indicator is calculated as follows:

$$\frac{\text{Total value of UKRI research funding for Scottish institutions involving partners in ODA least developed countries/}}{\text{Total research funding to Scottish institutions}} \times 100$$

The index value for the year is calculated by:

$$\frac{\text{Percentage of ODA least developed countries research funding of total research funding in year X /}}{\text{Percentage of ODA least developed countries research funding of total research funding in baseline year}} = 5.46\% \times 100$$

8. *Value of the Low Carbon and Renewable Energy Economy (LCREE) in Scotland*

Data on the relative importance of the LCREE sector is available here:

[www.ons.gov.uk/economy/environmentalaccounts/bulletins/finalestimates/2017#direct-and-indirect-activity-in-the-low-carbon-and-renewable-energy-economy-generated-796-billion-turnover-in-2017](http://www.ons.gov.uk/economy/environmentalaccounts/bulletins/finalestimates/2017#direct-and-indirect-activity-in-the-low-carbon-and-renewable-energy-economy-generated-796-billion-turnover-in-2017)

This provides the total (direct and indirect) GVA for LCREE in Scotland in £bn. This is translated into a proportion of the size of the economy by dividing the LCREE by total GVA in the Scottish economy. Data can be accessed here:

[www2.gov.scot/Topics/Statistics/Browse/Economy/QNA2019Q2](http://www2.gov.scot/Topics/Statistics/Browse/Economy/QNA2019Q2)

The indicator is calculated as follows:

$$\frac{\text{Size of LCREE GVA in Scotland (£bn)/}}{\text{Size of the Scottish economy GVA in current prices (£bn)}} \times 100$$

The index value for the year is calculated by:

$$\frac{\text{Proportion of LCREE of Scottish economy in year X/}}{\text{Proportion of LCREE of Scottish economy in baseline year}} = 8.0\% \times 100$$

9. *Combination of the indices into an overall index*

The seven indices are combined using a simple geometric mean. This ensures that any significant variation in the individual indices does not dominate the overall index.

No weighting is employed and all indices make an equivalent contribution to the average.

The formula for the geometric mean is:

$$\sqrt[7]{\text{Index1} \times \text{Index2} \times \text{Index3} \times \text{Index4} \times \text{Index5} \times \text{Index6} \times \text{Index7}}$$

### **How to access background or source data**

The data collected for this <statistical bulletin / social research publication>:

- are available in more detail through Scottish Neighbourhood Statistics
- are available via an alternative route <specify or delete this text>
- may be made available on request, subject to consideration of legal and ethical factors. Please contact <email address> for further information.
- cannot be made available by Scottish Government for further analysis as Scottish Government is not the data controller.



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