Understanding Capitals

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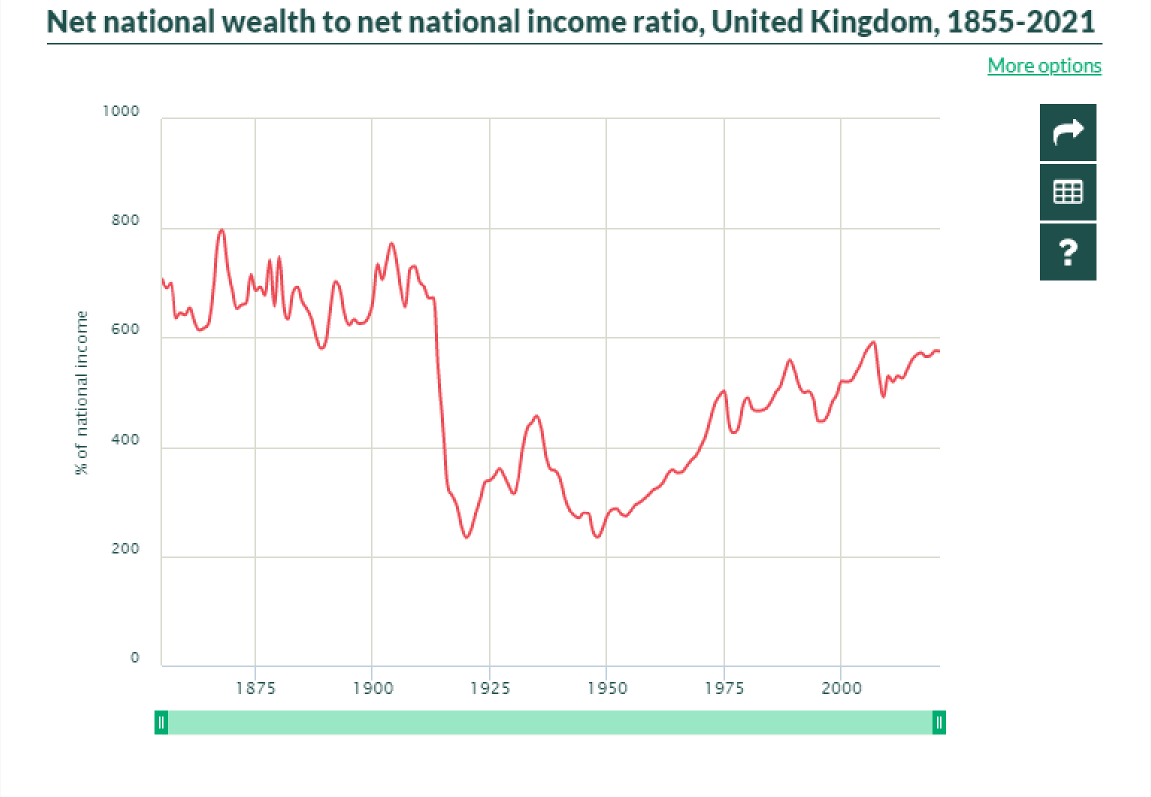
Agenda

- Why capitals?
- Boundaries and definitions: Production and assets
- Traditional to unconventional: Thinking about broader capitals in economic accounting
- Bringing it together: Inclusive/comprehensive capital (wealth)

Why Capitals?

There are many prominent areas of research which require the **conceptualisation** and measurement of capitals to answer economically important questions

Capital as a Factor of Production	Capital as Wealth
Extending "capital" to include human, natural, and other capitals	Net worth (/wealth) = capital + financial assets – financial liabilities
How is capital created, and how is it used? • Extension to human and natural capitals	Who owns capital (and who owns wealth)?
How productive is capital?	
How sustainable is growth?	



Source: World Inequality Database

Boundaries and Definitions: Production

General Production Boundary (SNA 2008, 6.24, my own emphasis):

Economic production may be defined as an activity carried out under the **control and responsibility of an institutional unit** that uses **inputs of labour, capital, and goods and services** to produce outputs of goods or services.

SNA Production Boundary (SNA 2008, 6.27, my own emphases):

The production boundary of the SNA includes the following activities:

a. The production of all goods or services that are **supplied to units other than their producers**, or intended to be so supplied, including the production of goods or services used up in the process of producing such goods or services;

b. The **own-account production of all goods** that are retained by their producers for their own final consumption or gross capital formation;

c. The **own-account production of knowledge-capturing products** that are retained by their producers for their own final consumption or gross capital formation but excluding (by convention) such products produced by households for their own use;

d. The **own-account production of housing services** by owner occupiers; and

e. The production of domestic and personal services by employing paid domestic staff.

Boundaries and Definitions: Assets

Asset (SNA 2008, 10.8, my own emphasis):

An asset is a **store of value** representing a benefit or series of benefits accruing to the economic owner by holding or using the entity over a period of time. It is a means of carrying forward value from one accounting period to another

Fixed Asset, i.e. capital (SNA2008, 10.11, my own emphasis):

Fixed assets are **produced** assets that are **used repeatedly or continuously in production processes** for more than one year.

The Asset Boundary (SNA2008, 10.33, my own emphasis):

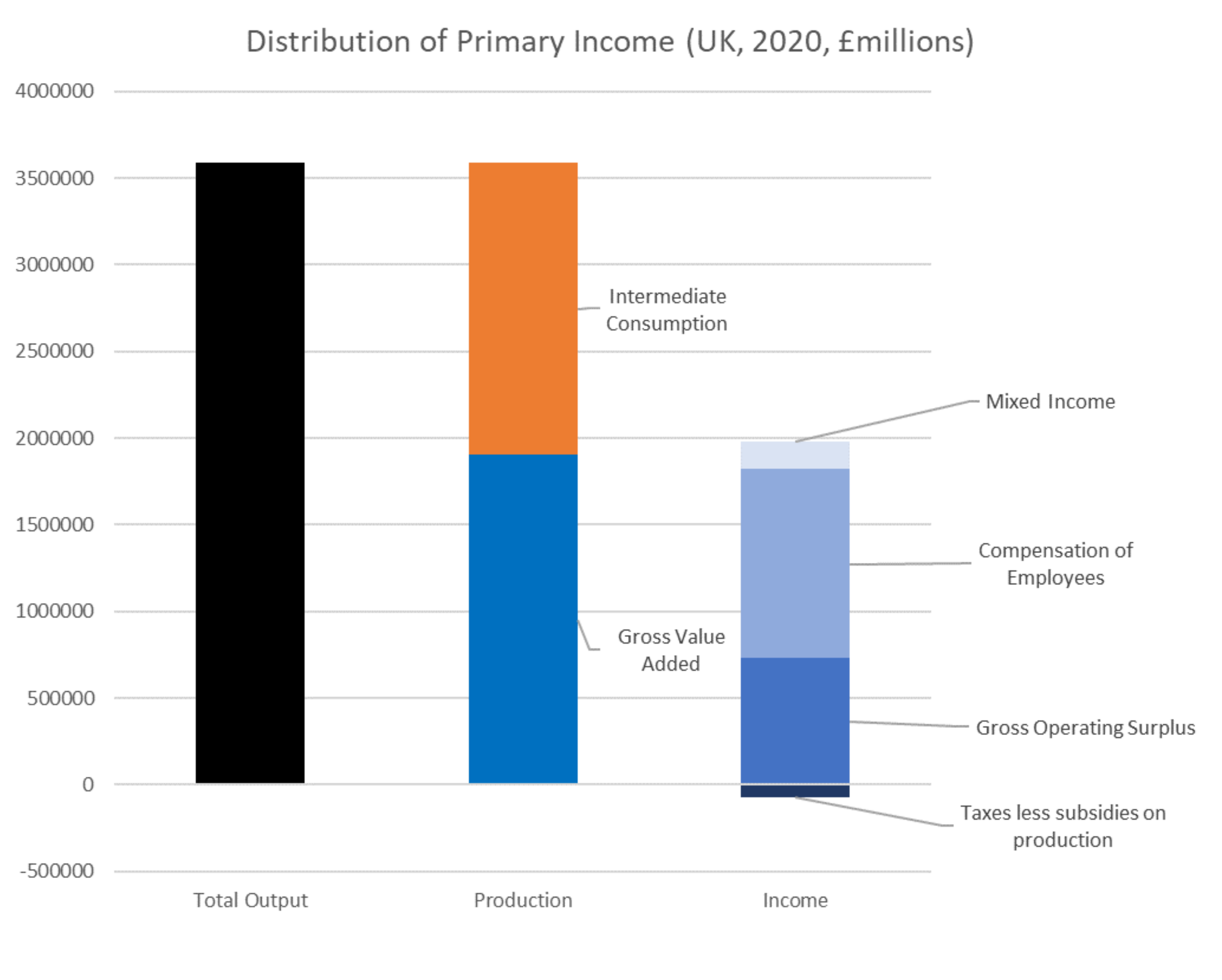
The asset boundary for fixed assets consists of goods and services that are **used in production for more than one year**.

Boundaries and Definitions: Assets

Key questions which arise for thinking about "additional" capitals:

- Does this assume a change to the production boundary, and how?
- Does this assume a change to the asset boundary, and how?
- What series of benefits does this entitle the owner to?

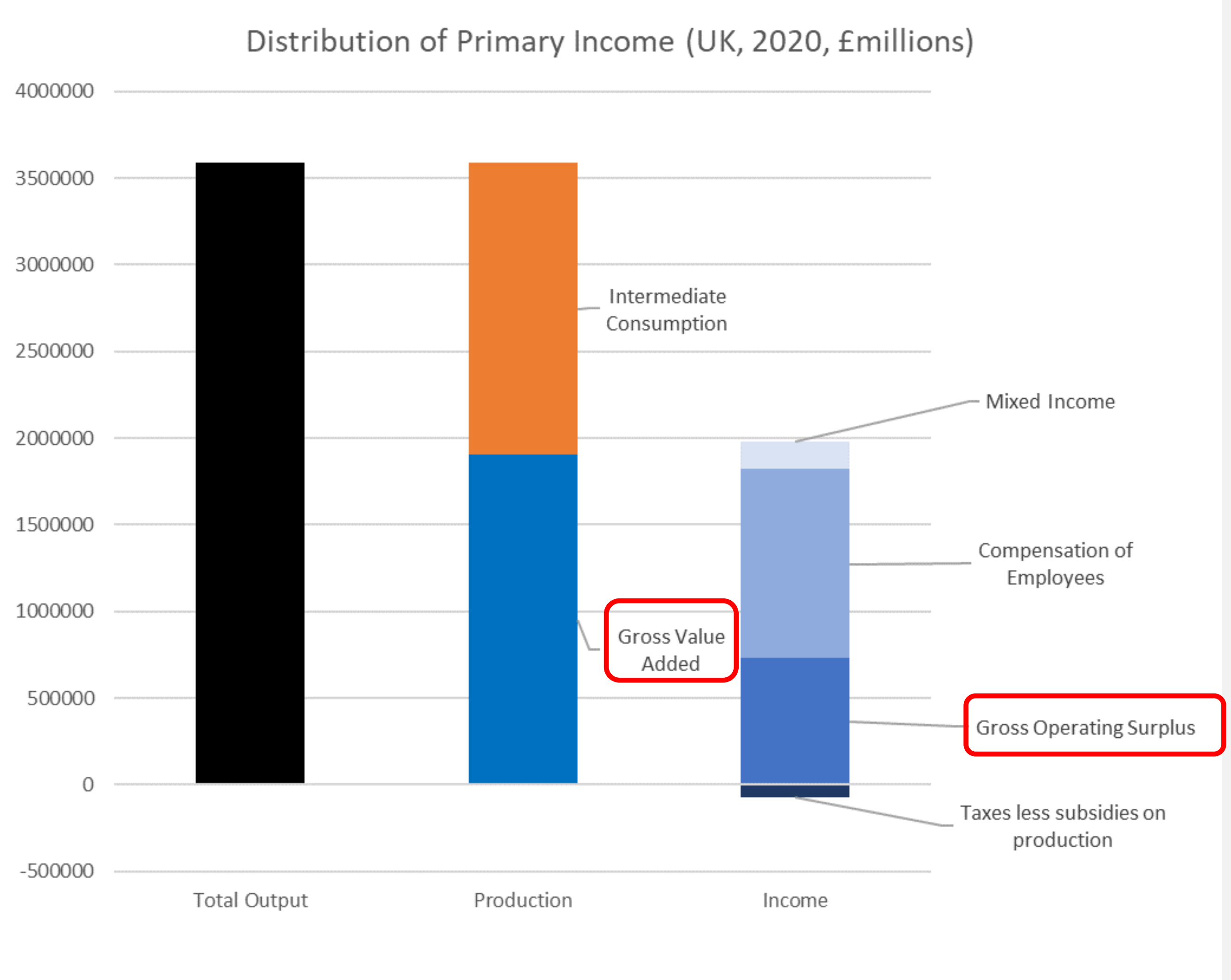
Traditional to unconventional



Simplified run through of where different capitals fit, or could fit, into economic accounting.

Lots of change is coming as part of the SNA update, which due to time I won't always mention

Traditional to unconventional: Tangibles

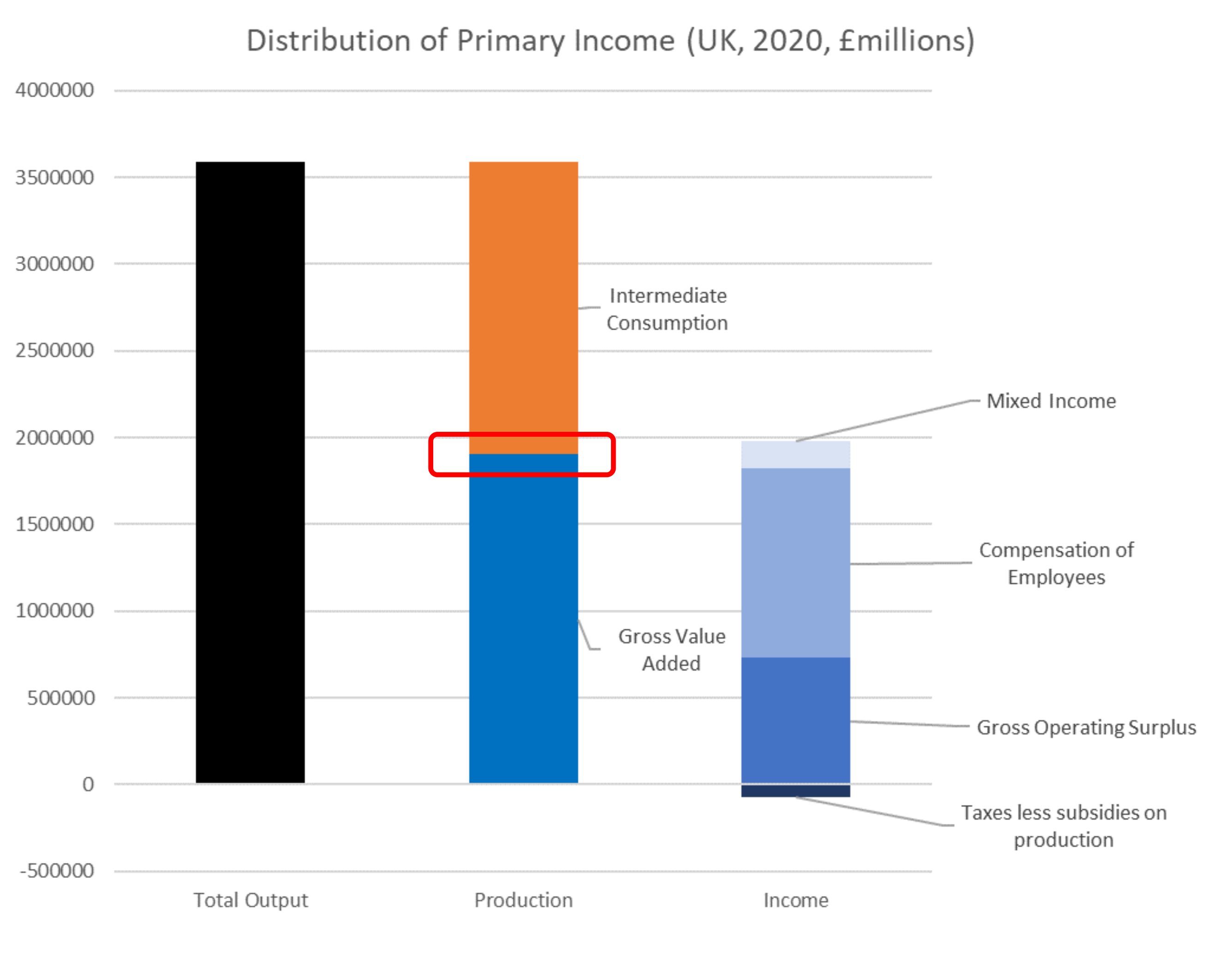


Most tangible capitals people would consider are already included as capitals within the SNA 2008:

- Dwellings
- Machinery and Equipment
- Weapons Systems
- Cultivated biological assets (more on this later)

Investment in the capitals is already caught in Gross Value Added (GVA), and compensation for the capital is caught within Gross Operating Surplus (GOS)

Traditional to unconventional: Intangibles



Several intangibles are already capitalised within SNA 2008 (referred to as Intellectual Property Products):

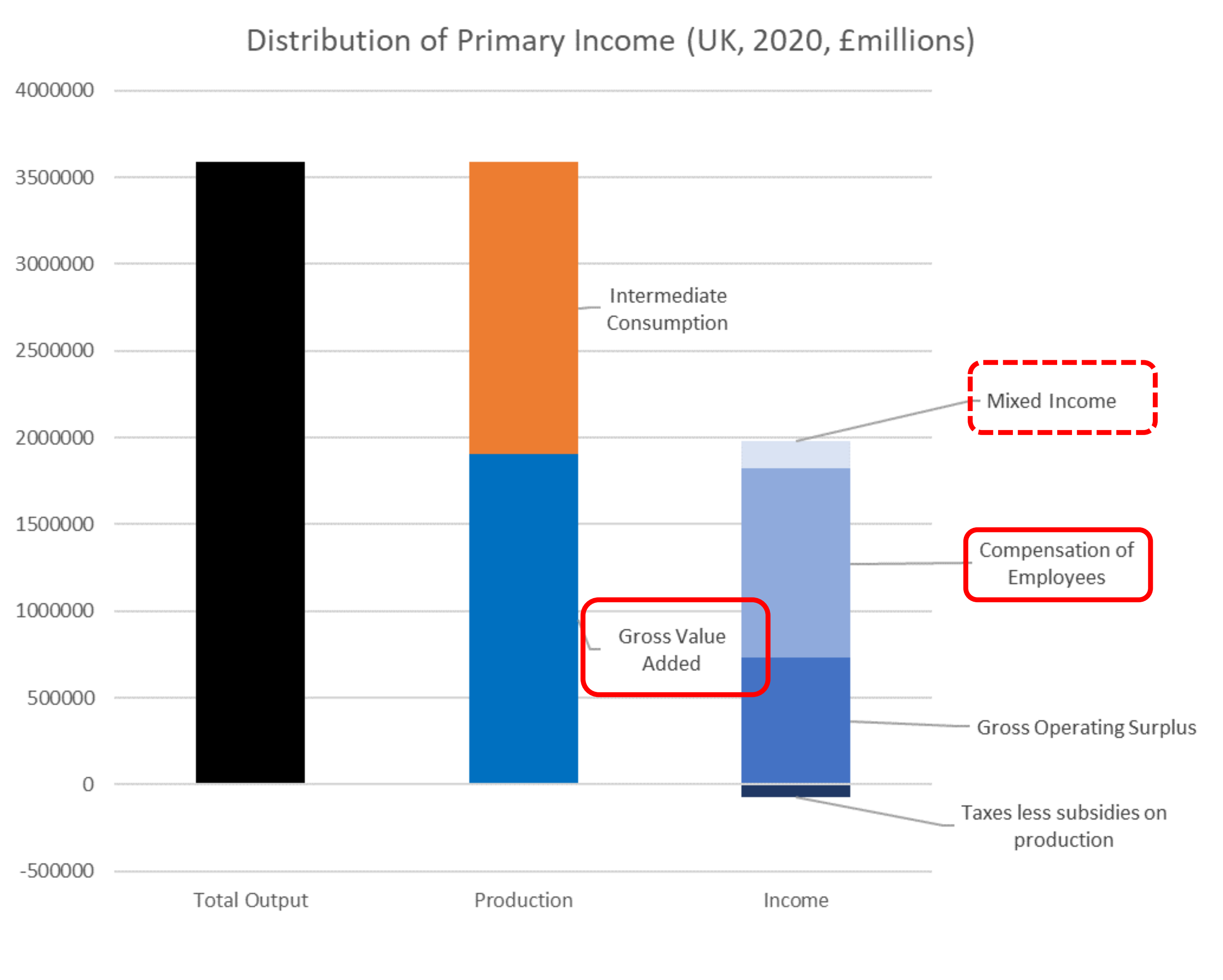
- Research and Development
- Software and Databases
- Mineral Exploration
- Entertainment, literary, and artistic originals

However, there are several others which might be considered (e.g. firm-specific training), which are currently uncapitalised – capitalising these would leave output changed, but shift the boundary between Intermediate Consumption and GVA.

Update to the SNA is considering capitalising:

- Marketing assets
- Data (as distinct from databases)

Traditional to unconventional: Human Capital



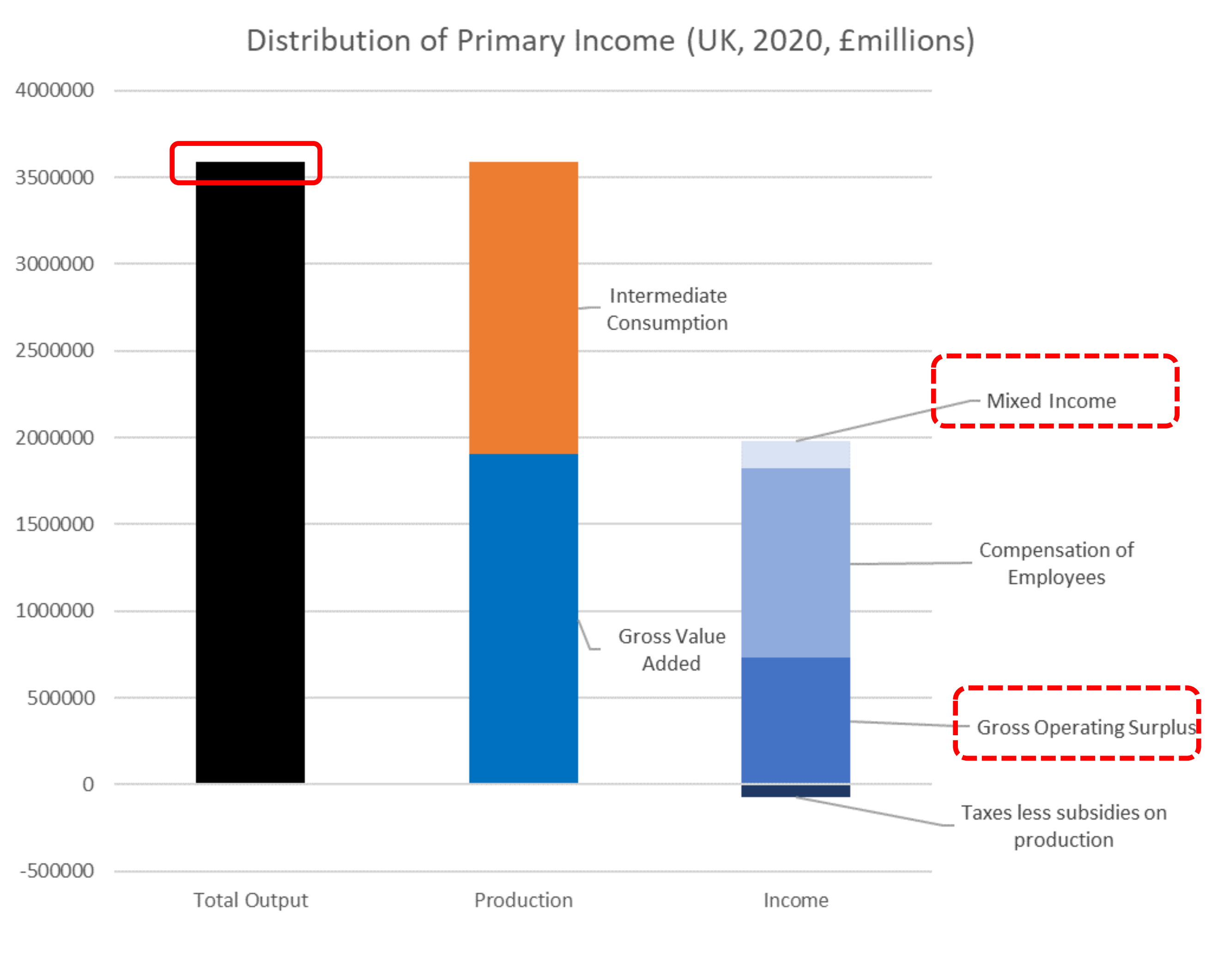
We could consider the potential future labour supply embodied in a person as “human capital”

Human capital is not currently treated as a capital in the SNA 2008, but several components relate to human capital

The compensation that employees receive can be conceptualised as a return for their human capital. Additionally, some portion of mixed income could be considered return for human capital.

Similarly, some final output could be interpreted as investment in human capital – e.g. education and training

Traditional to unconventional: Natural Capital



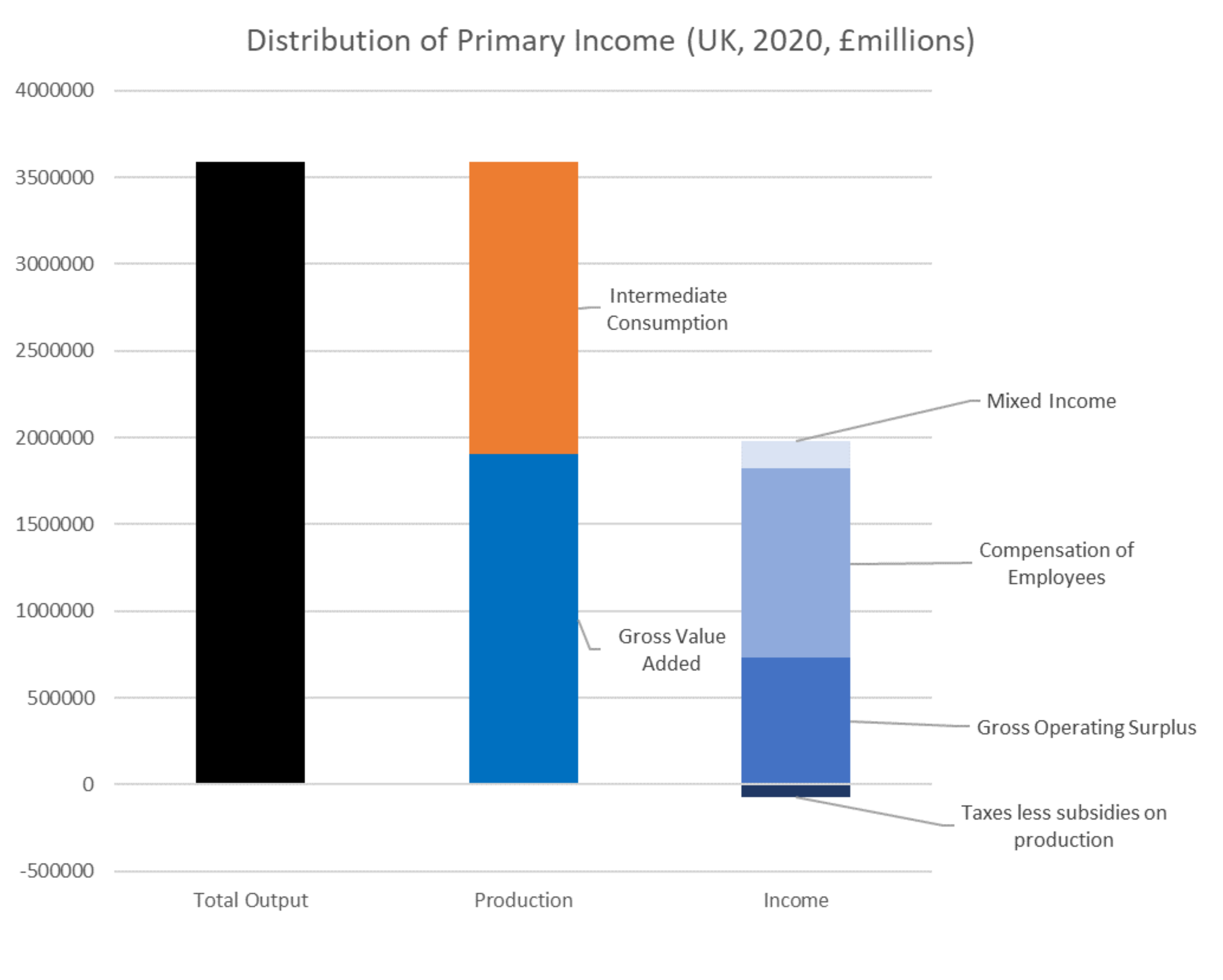
Some natural capital – **<u>cultivated</u> biological resources** – are captured in SNA 2008 as produced assets. Investment in these assets is capture in output and GVA.

<u>Uncultivated</u> biological resources are considered non-produced. Payments for leasing these are considered rents, which are currently captured in the allocation of primary income account and are not interpreted as creating value.

In the upcoming SNA update the distinction between cultivated and non-cultivated biological resources will likely be removed, so that all **non-migratory biological resources** will be considered produced.

Output (and so GVA) may not include all identifiable **ecosystem services** – e.g. in some cases where ownership is unclear or the services are non-market final consumption. Including these services, and the corresponding measurement of natural capitals, would require fundamental changes to both the production and asset boundary. This would see the expansion of total output, GVA, and GOS + Mixed Income.

Traditional to unconventional: Social and other



Lack of a generally accepted definition, but includes trust, networks, social interactions and the ability to achieve outcomes based on collective action

Two approaches to valuing social or other capitals:

- As a distinct capital
- As an "enabling" capital

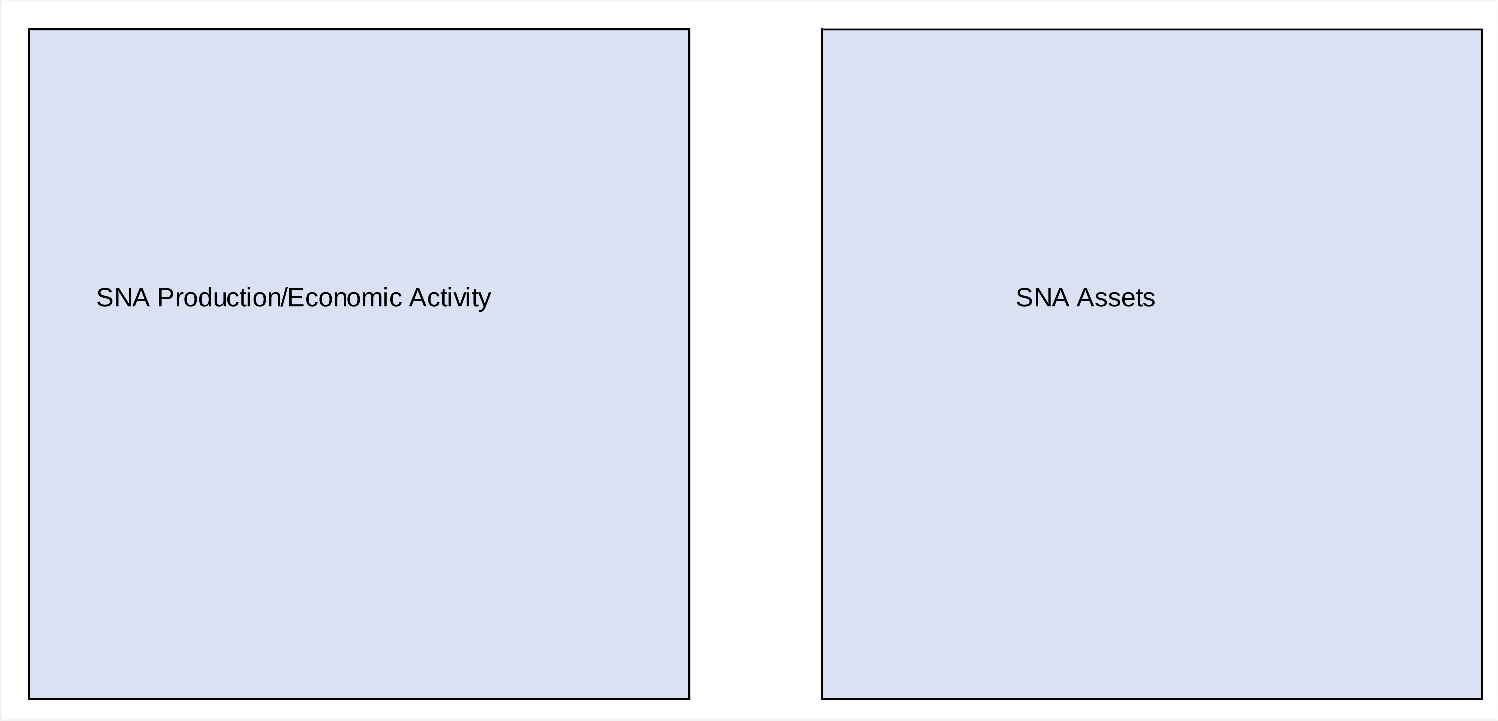
<u>Distinct capital</u>

- What distinct flow of income could be attributable to the capital?
    - Could be distinct in terms of its category, or its time

<u>Enabling capital</u>

- Wouldn't require a distinct output, flow of income to be attributable to it.
- Operates more as an analytical tool for the other capitals – e.g. what portion of human capital (or other capitals) due to social 'capital' enabling these?

Bringing it together: Inclusive/comprehensive capital (wealth)



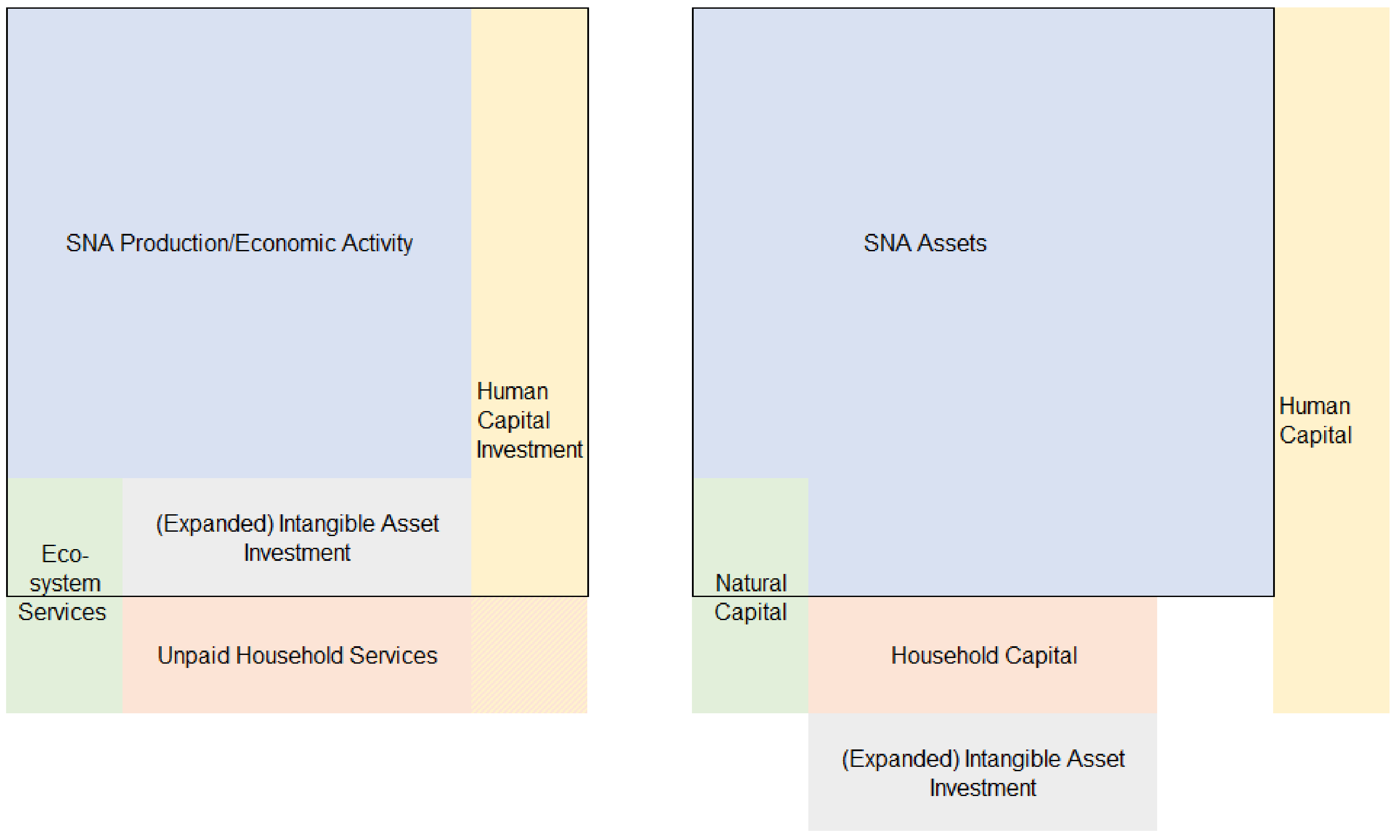
How could we picture the impact on the SNA production and asset boundaries of treating all intangible, natural, and human capitals as capitals?

Here’s a high-level overview on how the UK ONS have been approaching this so far…

Bringing it together: Inclusive/comprehensive capital (wealth)

Inclusive Income

Inclusive Wealth

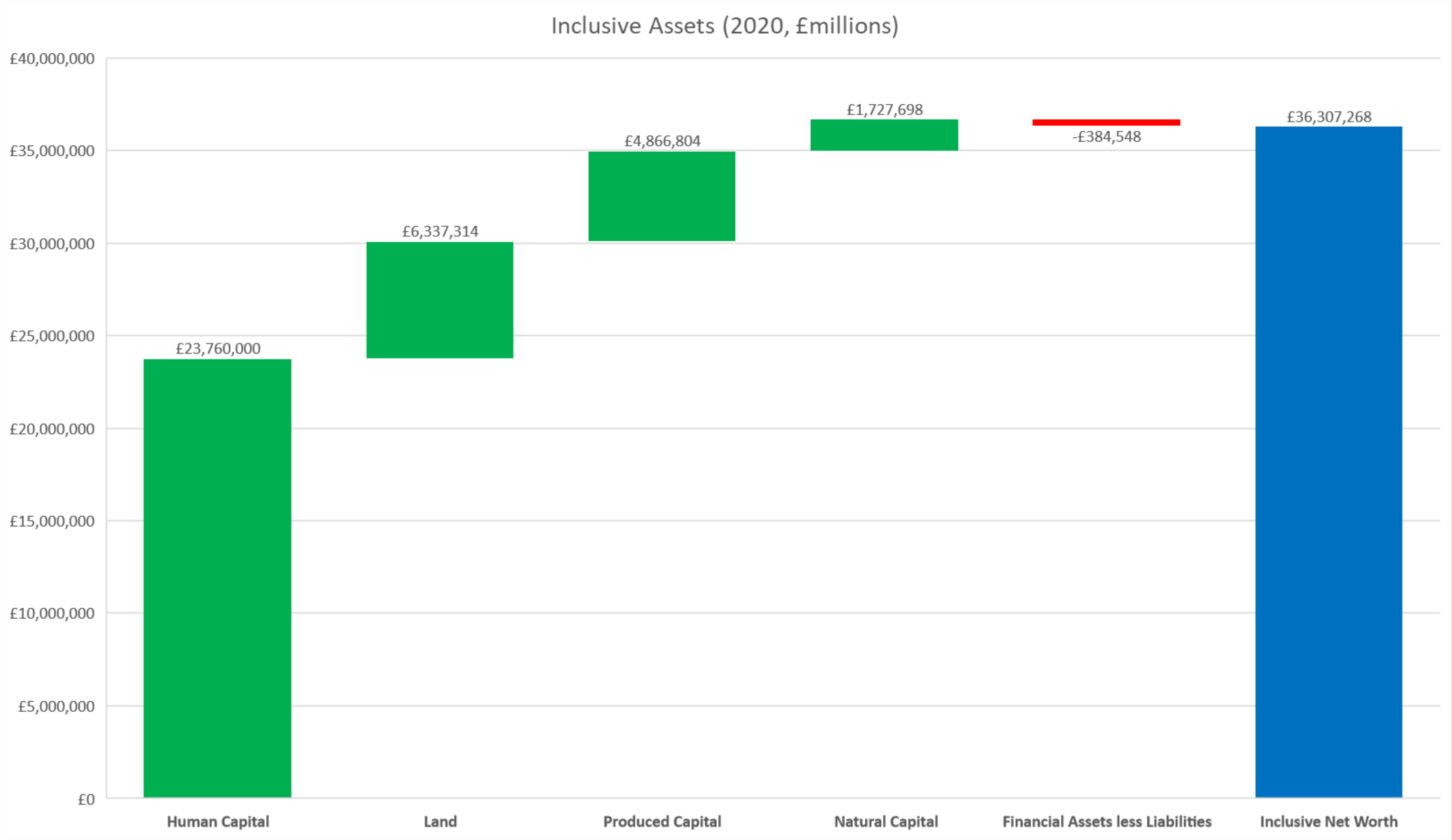


- Expansion of the asset and production boundaries to include investment in an expanded array of **natural capitals**, as well as the ecosystem services derived from these capitals
- Expansion of the asset boundary to include investment in **human capital**
- Expansion of the asset boundary to include investment in an expanded array of “**intangible capitals**”
- Expansion of the production boundary to include **services produced by the household for own-use** and expansion of the asset boundary to include the household durables used as capital when producing these unpaid household services

Bringing it together: Inclusive/comprehensive capital (wealth)

[ONS produced exchange price estimates for the total produced, human, and natural capital stock of the UK]

- We also included financial assets minus liabilities, to create an “Inclusive” net worth measure
- Conceptual work required to avoid double counting
- Done for Whole Economy only – differences between SNA and SEEA would make an institutional breakdown difficult



Bringing it together: Inclusive/comprehensive capital (wealth)

<u>Accounting (shadow) prices or market (exchange) prices</u>

- Different approaches to measuring **value**
- Accounting prices would measure value according to **marginal utility** rather than exchange price
- Reasoning for accounting prices:
    - Moving to the broader capital definition incorporates more **non-market activity**, so better to move away from a concept of value which presumes a market
    - Conceptually better valuation for utility-maximising **policy makers**
- Reasoning for market prices:
    - Less **imputation**, ease of consistent measurement
- Which approach is preferable?
    - ONS have been researching the construction of a measurement framework constructed around a bridging table between the two approaches – based on the conceptual difference between the two being the value of **externalities**