A changing world and the implications to rural NSW

Environmental Development and Allied Professionals Conference

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12.04.18

We acknowledge the traditional custodians of the land and pay respects to Elders past, present and future.

NSW GOVERNMENT

Contents

1

A changing world

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“Megatrends help us understand life for EVERYONE, EVERYWHERE in the future.”

(HP, 2018)

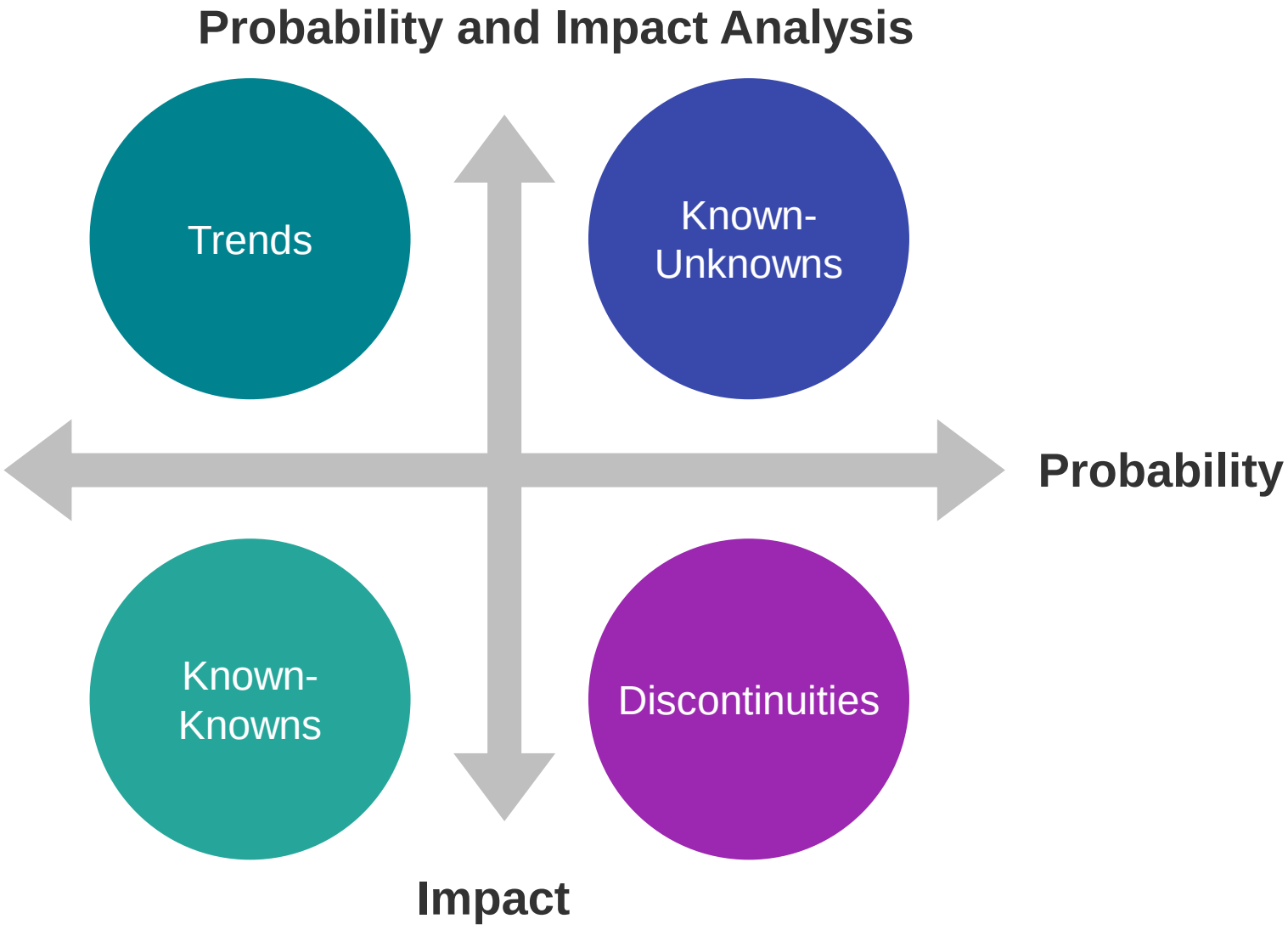
We cannot plan for the future unless we consider and understand the megatrends that will drive change.

Planning needs to analyse <u>future scenarios</u>
to inform decision making on <u>future land uses.</u>

“A megatrend is a major shift in environment, social and economic conditions that will substantially change the way people live. Once in place, megatrends will influence a wide range of activities, processes and perceptions, both in government and in society, possibly for decades.”

Planning Institute Australia 2016

Globally megatrends are driving change



Megatrend key terms

Trend

A pattern of social, economic, environmental, technological or geopolitical change

Megatrend

A more important trajectory of change expressing itself over a decadal period

Shock

A sudden and hard-to-predict but known possible event that has a chance of occurring

Megashock

A more important sudden event resulting from multiple trends and shocks with far-reaching implications

Megatrend key terms

Scenario

A plausible and evidenced-based narrative about the future, at a set point in time, incorporating both trends and shocks

Weak signal

A pattern of change which is not common and hard to discern amongst signal-to-noise-issues. Could impact the organisation

Wild card

‘Left-of-field’ event that is well outside the commonly considered range of risks before an organisation

Signpost

Provides information about a decision that will need to be taken in the imminent future based on trends and other analyses

Megatrends

2. Planetary pushback
Protection of biodiversity and the global climate

4. Forever young
An aging population and changing patterns

6. Porous boundaries
Technology and globalisation are changing global relationships







1. More from less
Increasing demands for limited resources

3. The silk highway
Rapid economic growth

5. Digital immersion
An increasingly technologically connected society

7. Great expectations
Rise of the individual consumer

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1. MORE FROM LESS

We need about 2.7 hectares of land and water space per person to produce what we consume but there is only around 1 hectare available

For instance, the “vanishing” Nile River in North Africa

The Nile River provides transport (goods and people) and supports tourism, agriculture and water supply in Egypt, Sudan and Ethiopia.

The construction of the Grand Ethiopian Renaissance Dam for hydroelectricity and flood management is causing geopolitical friction over water availability between these three countries.

2. PLANETARY PUSHBACK - *‘going, going gone’*

Australia has the worst mammal extinction rate in the world.
This is expected to continue due to the changing climate and pressures on habitat from urbanisation.

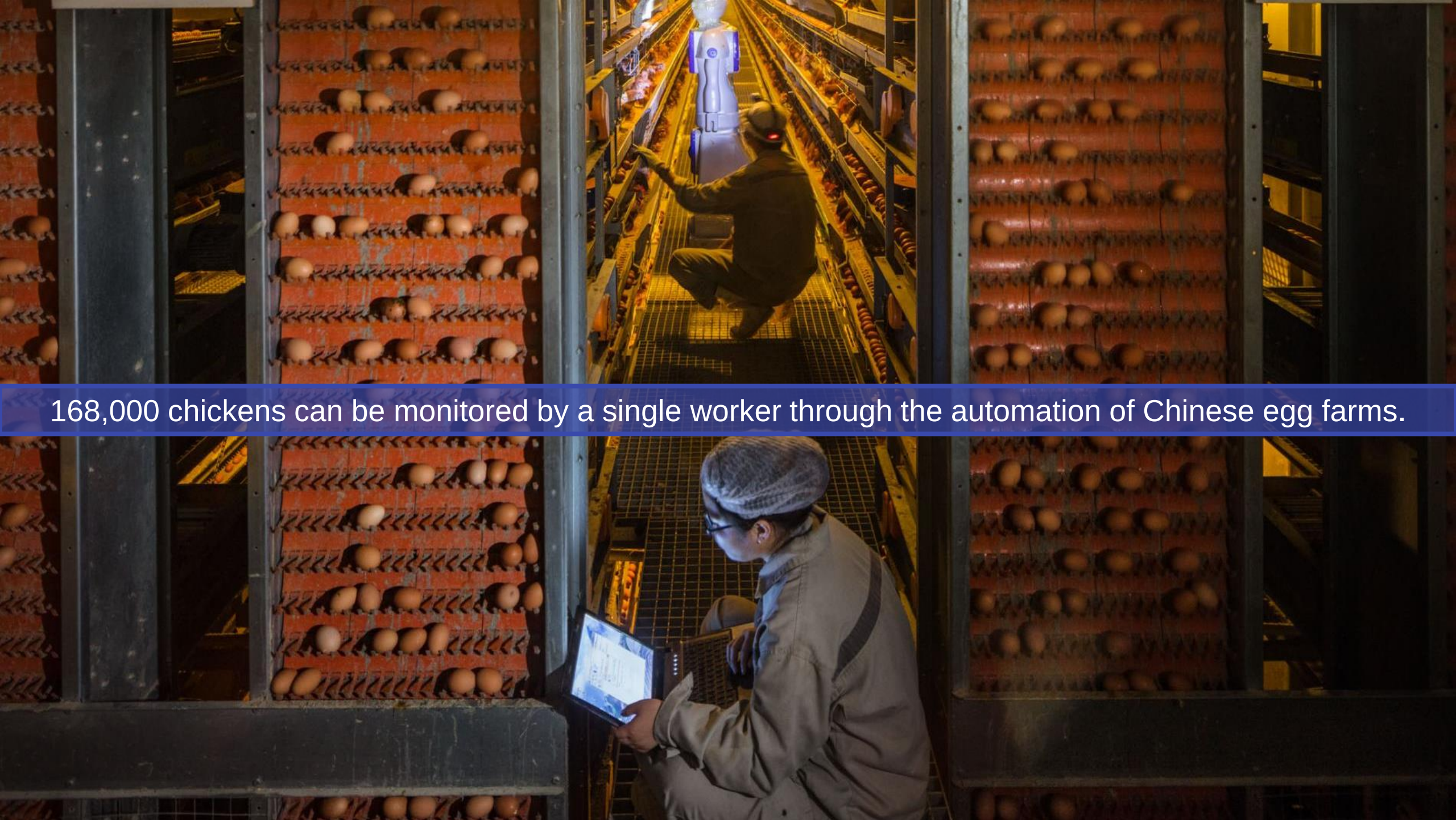
3. THE SILK HIGHWAY

An economic shift is occurring around the world as the purchasing power of the world's middle class is expected to rise 40-50% by 2030. The largest increase comes from the Asian middle class which is expected to rise 8 times between 2010 and 2030. This new cohort of wealth will look for goods and tourism experiences on offer in the Asia-Pacific Region, particularly those with high quality products and environments like Australia.

For instance, feeding China

China is grappling with a daunting conundrum - how to feed nearly 1.3 billion (one-fifth) of the world’s population with less than one-tenth of the world’s arable farmland. Supplying this significant and changing diet means looking abroad to potential suppliers such as Australia.

Dairy consumption in China has skyrocketed since the 1990’s.
The largest dairy farm in the nation has 36,000 cows highlighting the scale of demand.



168,000 chickens can be monitored by a single worker through the automation of Chinese egg farms.

4. FOREVER YOUNG

Nearly one-quarter (22%) of Australia's population will be over 65 years of age by 2056.
We will need to capitalise on the experience and knowledge of this older generation in the future but this requires a structural shift to the current business and taxation practices in Australia.

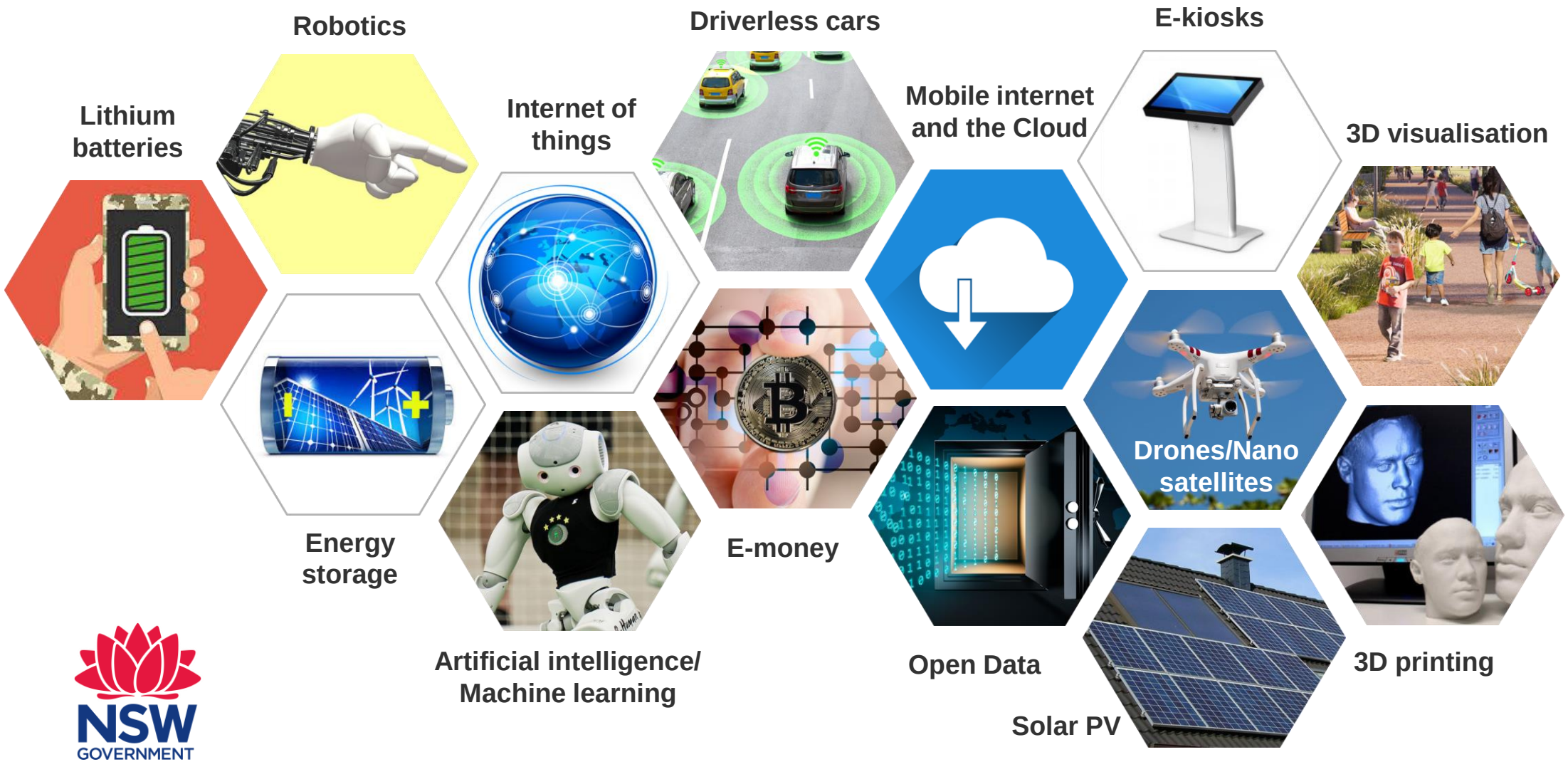
5. DIGITAL IMMERSION

More than 50 billion ‘things’ will be connected to the internet by 2020. Globalisation and technological development are shrinking the world and challenging the notion of who is our neighbour.

For instance -

- Remotely turn on your kettle straight from your smartphone
- Monitor your own heartrate through an Apple Watch and store the data on your iPhone

Technologies are driving megatrends and society's interaction with the consequential change



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“The drones aren’t coming, the drones are here”

(Ben Smithurst 2018)

6. POROUS BOUNDARIES

‘Connectography’ – global boundaries are becoming increasingly blurred as physical and web based infrastructure is more prevalent than ever

Connectography

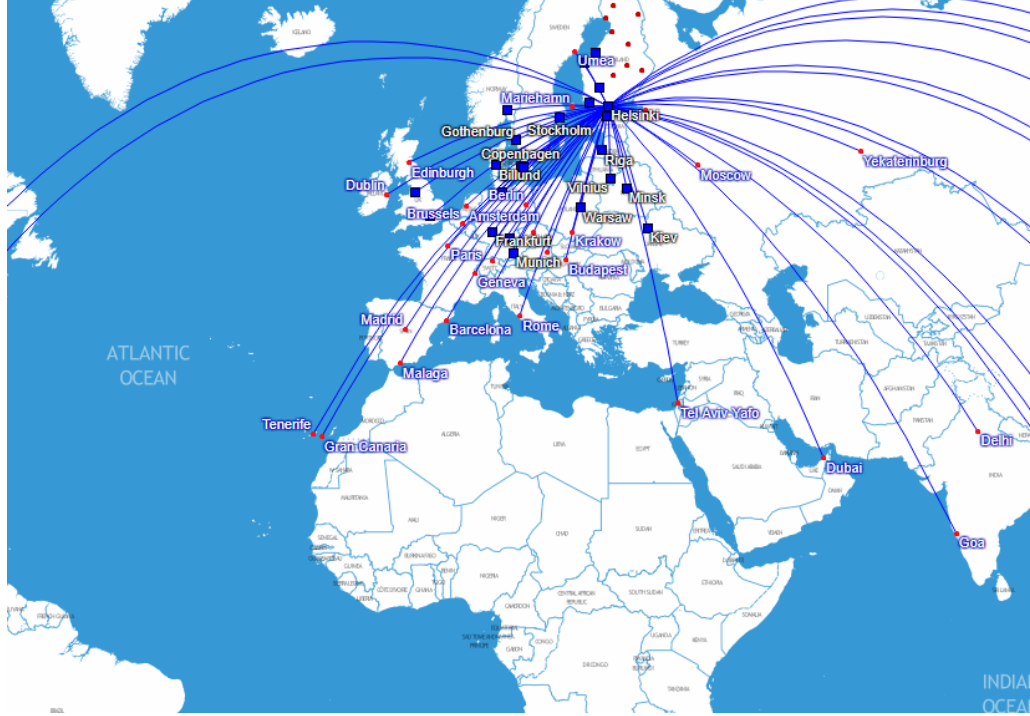
A concept that highlights the importance and prevalence of increasing facilitation by connectivity of both physical and web base infrastructure rather than the existing political atmosphere.

Dr. Parag Khanna

Leading global strategist in international relations

For instance, Finnair cargo

- Finnair has creatively used their passenger airbuses to also carry on agricultural cargo such as seafood.
- To ensure the cargo is freshly preserved the airbuses are fitted with refrigerated cargo holds.
- Up to 20 tonnes of cargo can be carried per flight and may outnumber the amount of passengers.
- Finnair is also now one of the lead airlines in the distribution of pharmaceuticals.



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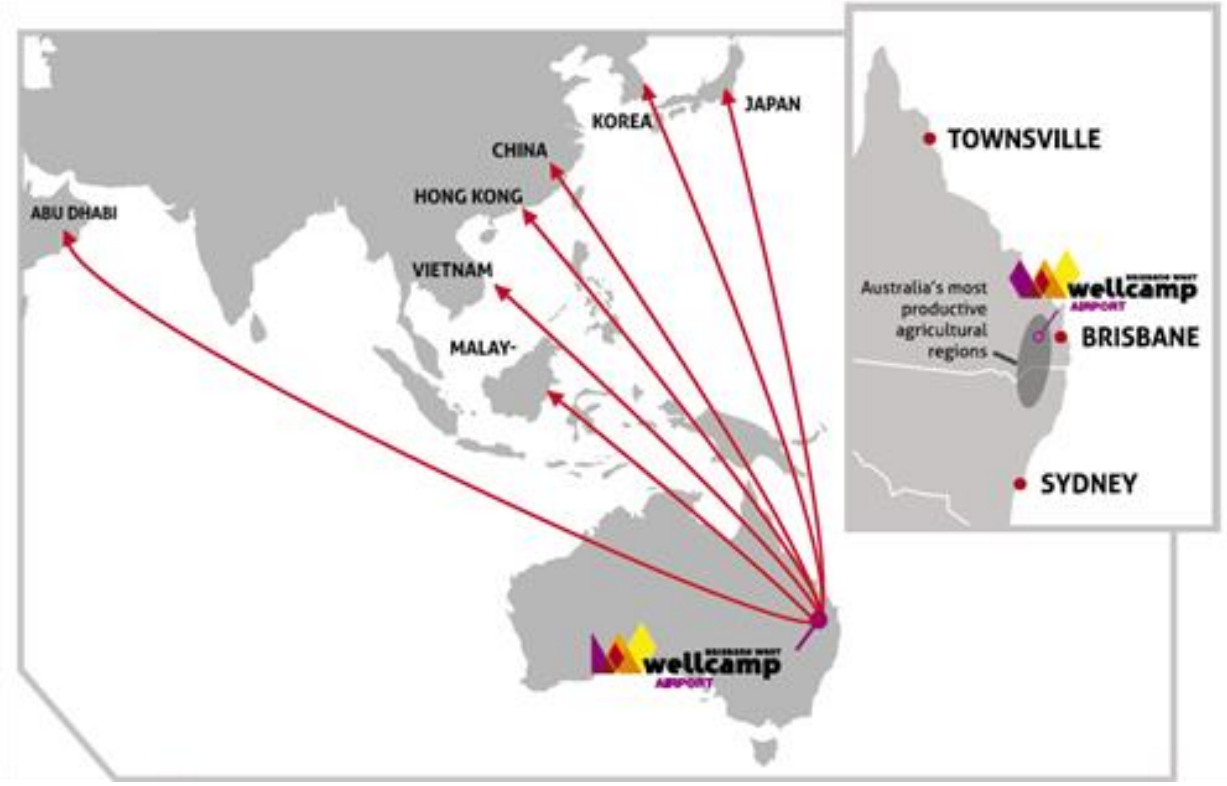
For instance, Cathay Pacific

Cathay Pacific connects Australia to South East Asia through Toowoomba Wellcamp Airport



7. GREAT EXPECTATIONS

People are living and enjoying a longer lifestyle. There has been a growing expectation by the consumer for a higher quality of goods and services, particularly the fast delivery of goods facilitated by technology.

For instance,

- ‘Smart doorbells’ connected to your phone can allow couriers to drop off parcels inside your home as you monitor their progress.
- The use of apps to track the provenance of eggs and whether they are from a free-range or cage farm.

For instance, from paddock to plate

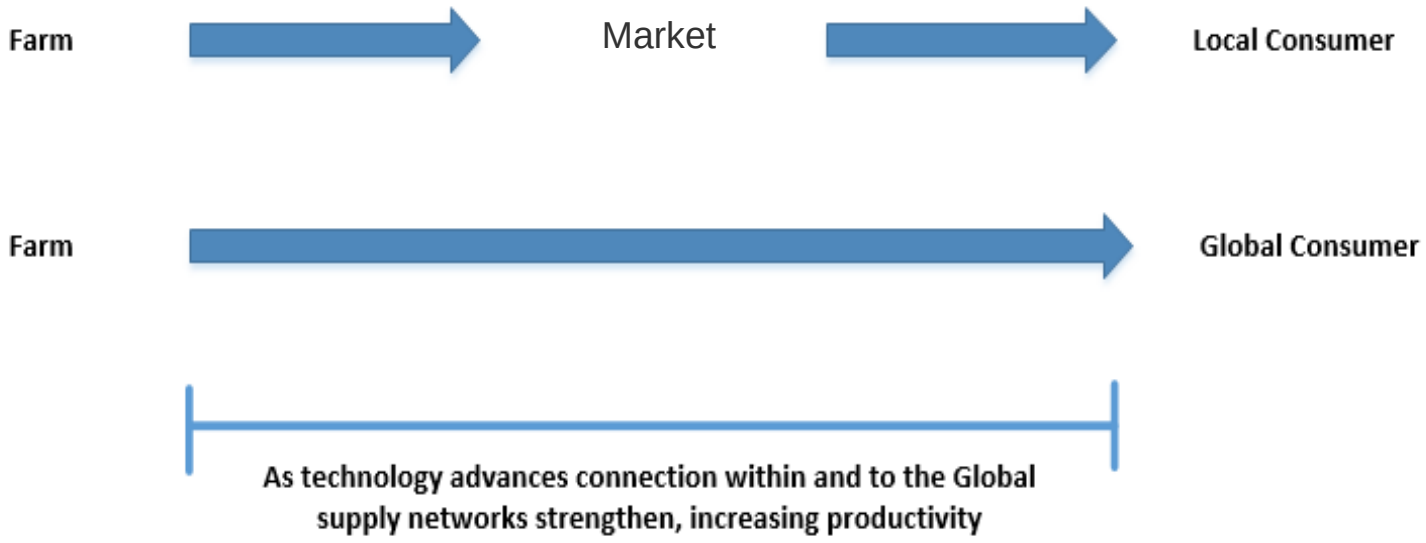
A new freight and logistics system is emerging as a result of changing consumers demands including a greater interest in the provenance of food. This trend together with increased connectivity (web and physical) between producers and consumers is creating new opportunities for entrepreneurs to enter new markets.

The changing freight and logistics response

Consumers are increasing interested in understanding the **provenance** of food, including:

- who produced it?
- where did it come from?
- how did it get to them?
- was it produced in an ethical and sustainable manner?

New business opportunities are emerging as **technology** provides new and innovative ways for producers to respond to consumer demands and **new infrastructure** enables greater connectivity to new and more diverse markets.



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Macro to micro – from strategy to implementation

MACRO | **MICRO**

MEGATREND
Selected trends that impact your business and markets

SUBTREND
A sub-layer of trends that has a wide ranging impact

IMPACT TO YOUR INDUSTRY
Visualising the roadmap of these critical forces through scenario building and macro economic forecasts

ANALYSIS OF OPPORTUNITIES AND UNMET NEEDS

IMPACT ON FUTURE PRODUCT/TECHNOLOGY

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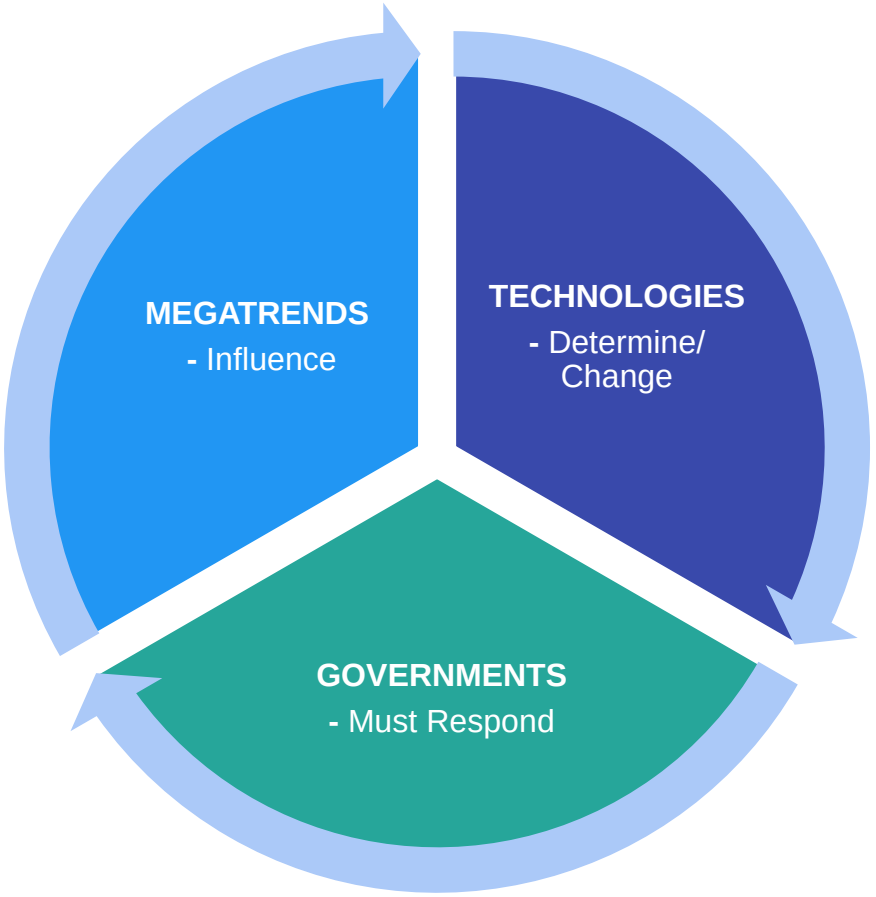
(Source: Frost and Sullivan 2012)

The Relationship



In consideration of the above the *dynamic relationship* between Megatrends and technologies as determinants for government decision-making can begin to be understood.

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2

Implications for rural areas

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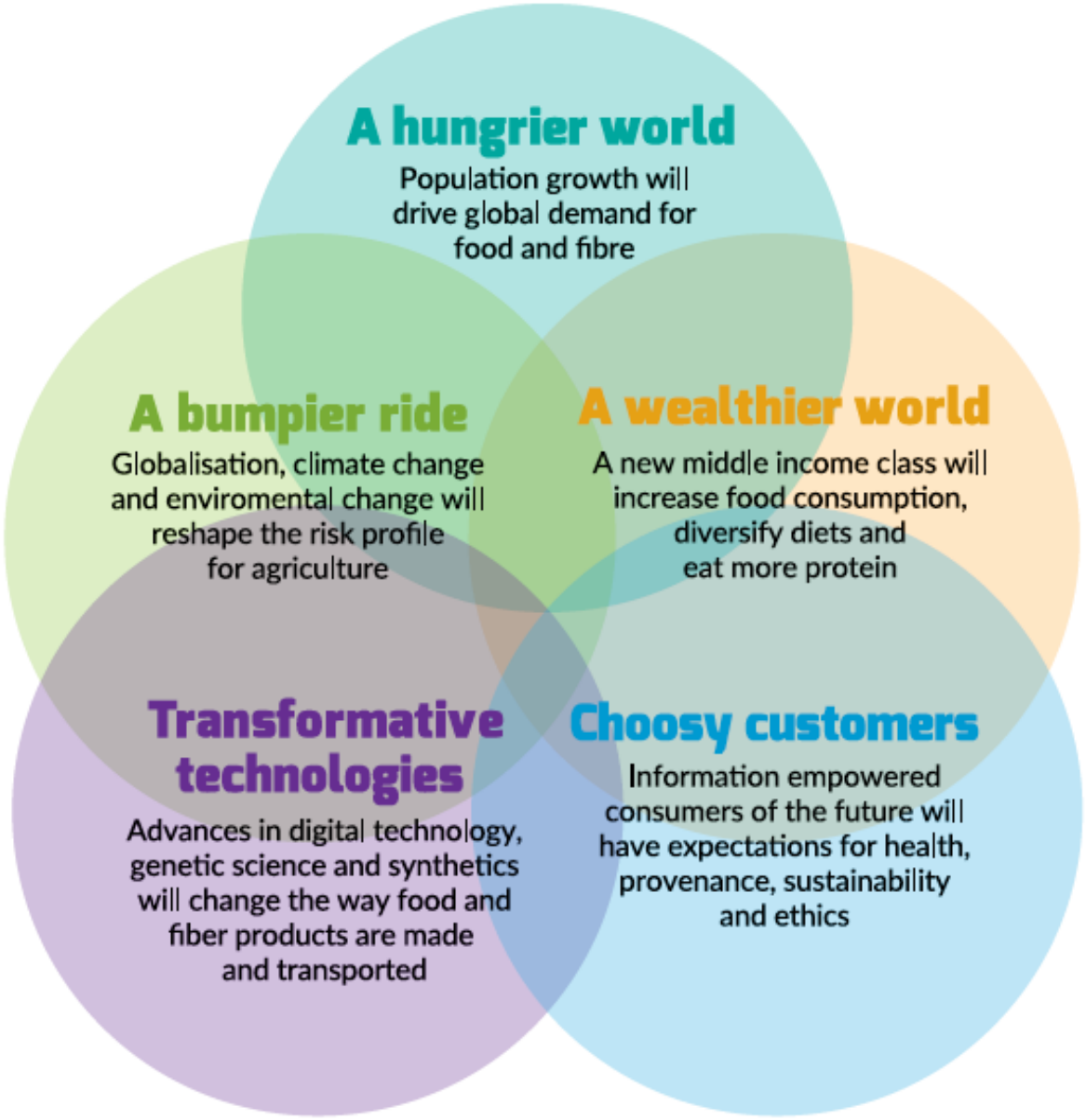
CSIRO drivers of agricultural change

We must:

- understand the issues;
- identify the patterns of change and their consequences;
- to inform strategic decision-making based on a vision of the future.



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Connectivity and functionality

Functionality -

how and why we use space and refers to the economic, social and environmental identity or ‘DNA’ of a locality.

Connectivity -

how we link up different localities. It allows the optimisation of the movement and distribution of people and goods. Capstone infrastructure investments in regional NSW, offer a range of opportunities including the efficient freight and logistics networks.

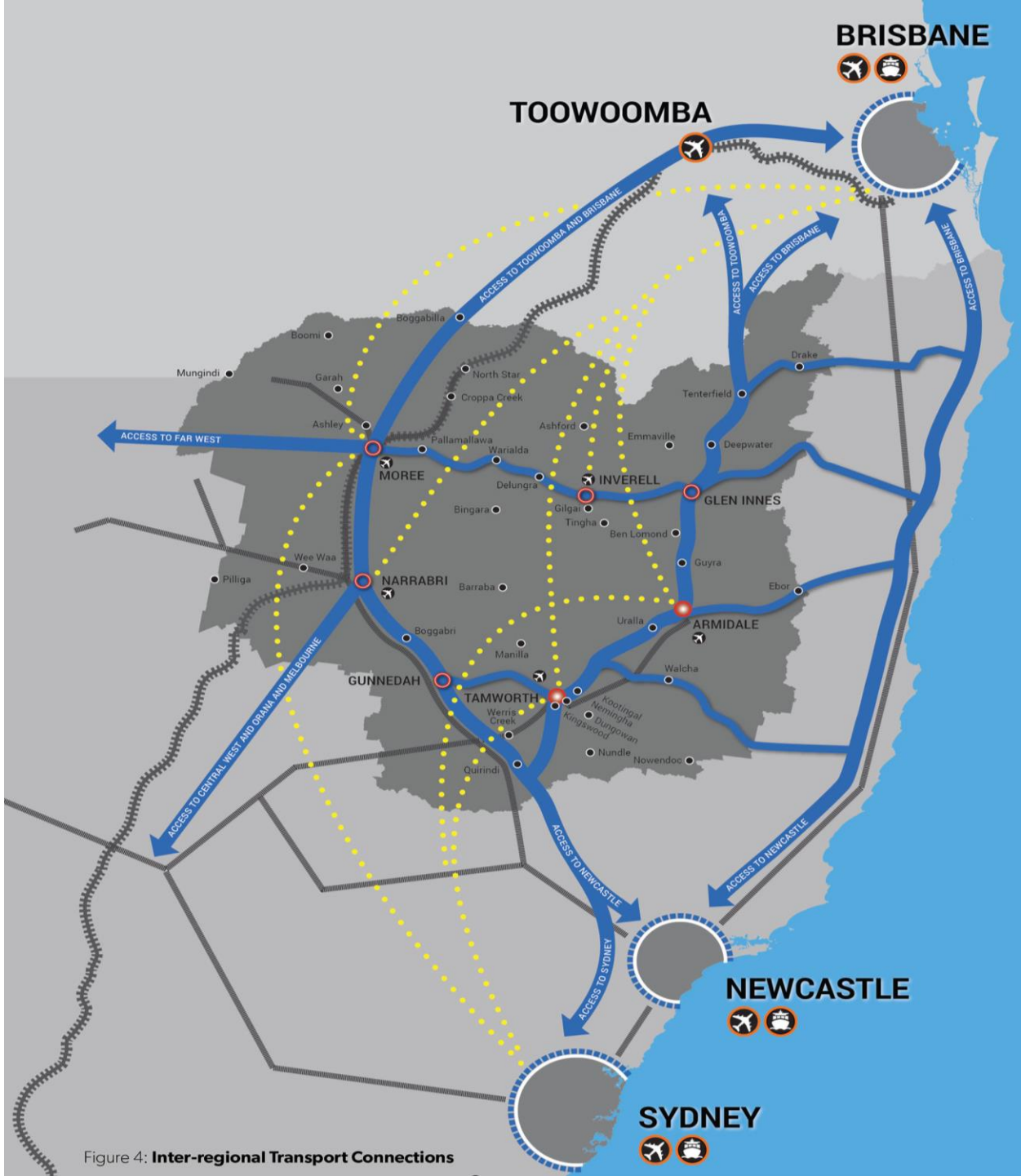

Figure 4: **Inter-regional Transport Connections**

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Establishing the agricultural identity of the region

E.g. Riverina Murray, a food bowl

$1,045 *million*

$169 *million*

$44 *million*

$24 *million*

$69.2 *million*

$44.5 *million*

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For instance, blueberries on the North Coast

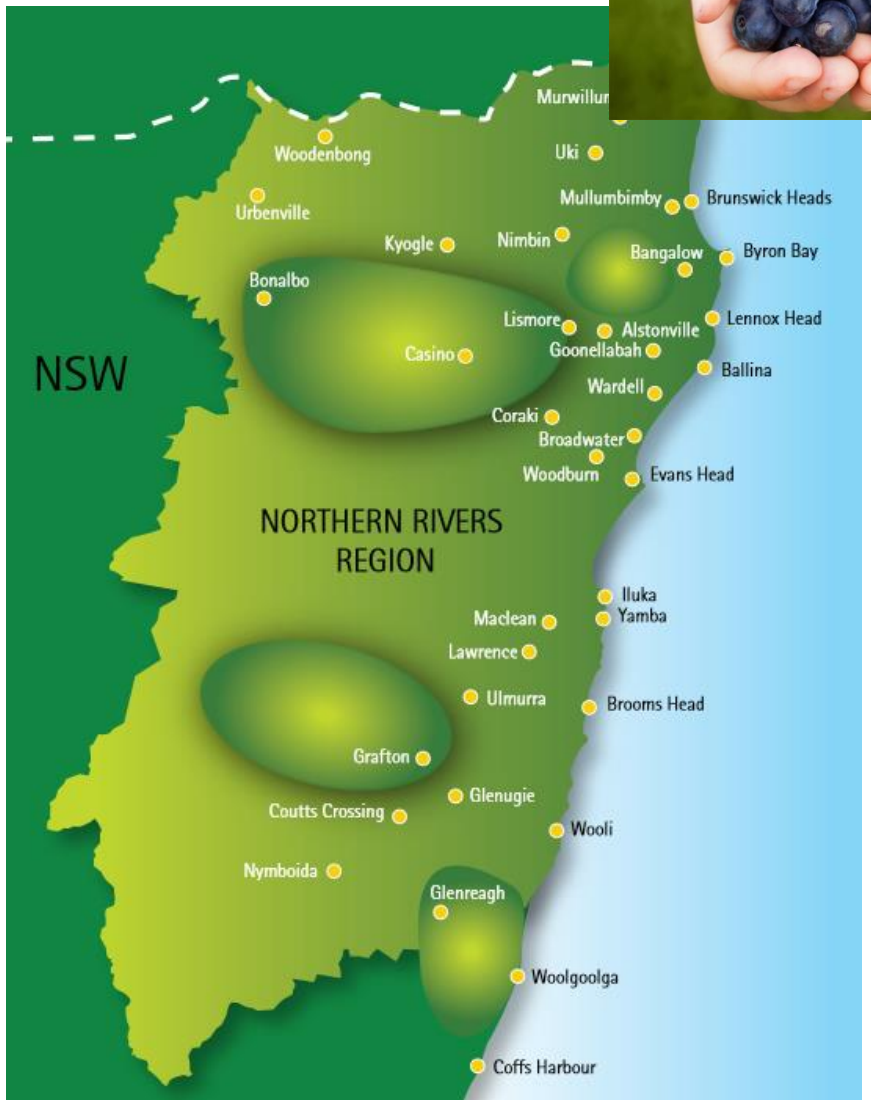
90%

NSW accounts for 90% of Australia's blueberry production with most of this industry located on the NSW North Coast.

4000m²

Recent freight and logistics investment includes 4,000sqm cool room facility in a former Bunnings.

Air freight opportunities are presented by the airport network in the region.



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For instance, cherry production in the South-East Tablelands

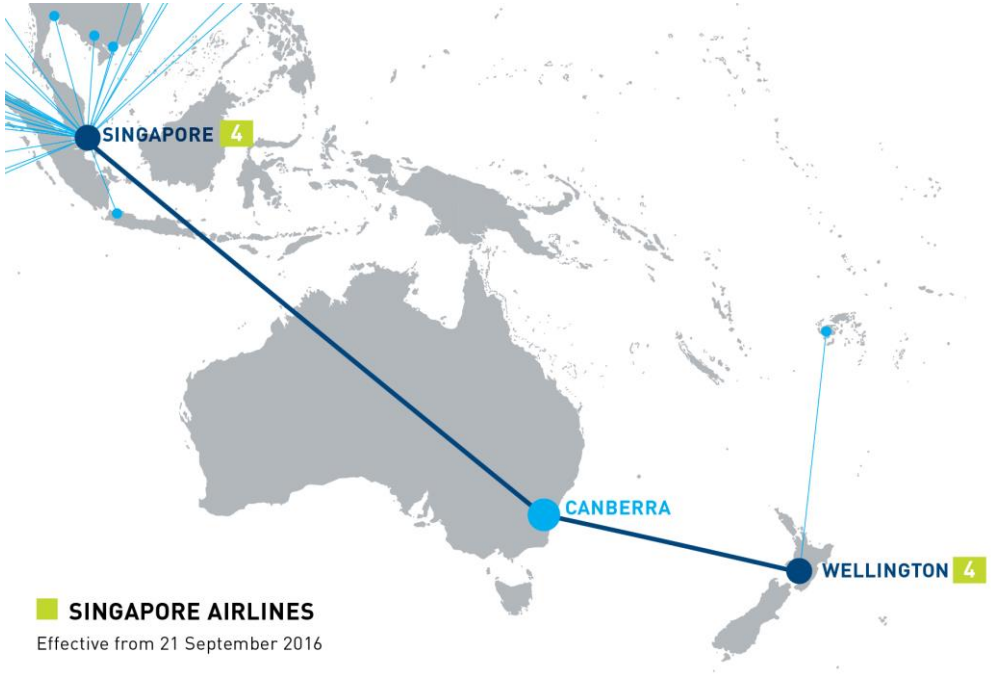
38% 38% of NSW cherry production is in the South East Tablelands region.

SOLD Combined Hong Kong and China purchased more than half the Australian crop.

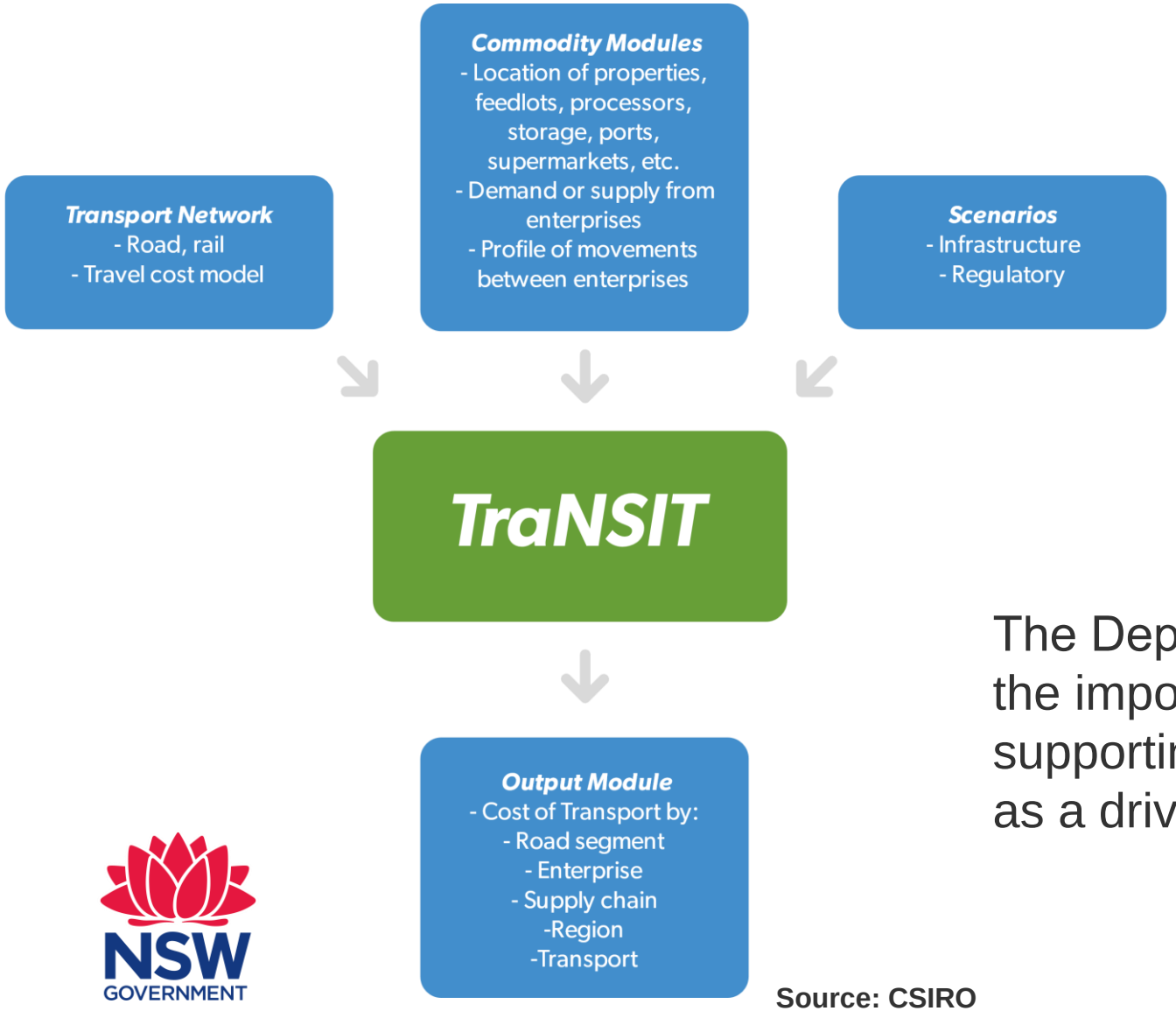
Chinese investors have purchased 5 of the 6 Tasmanian cherry farm sales in 2016.

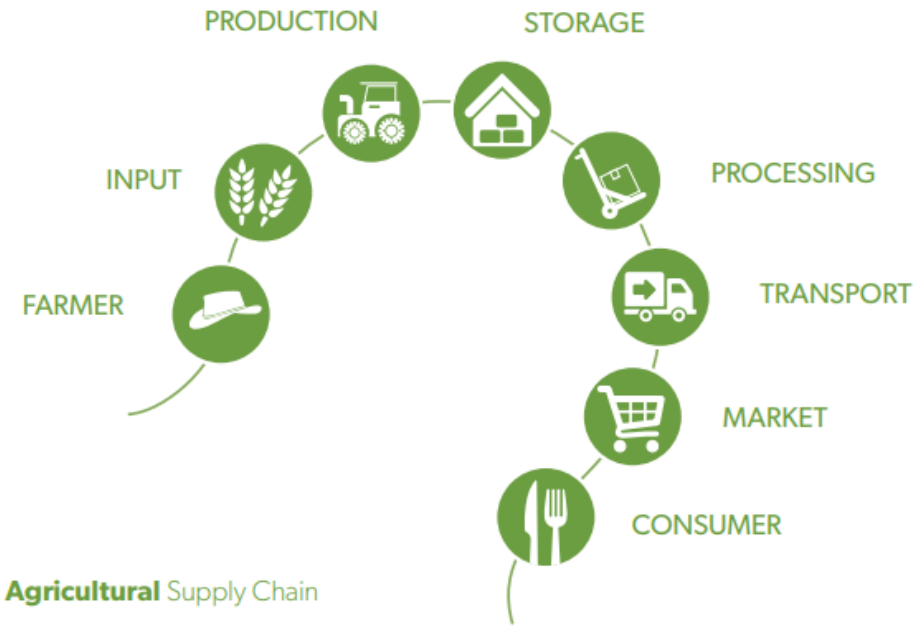
48 HOURS Air freight connections allow cherries to be delivered to China within 48 hours of picking.

Tasmania's late blooming crop is a recognised Chinese New Year and Spring Festival gift.



Improving freight efficiencies

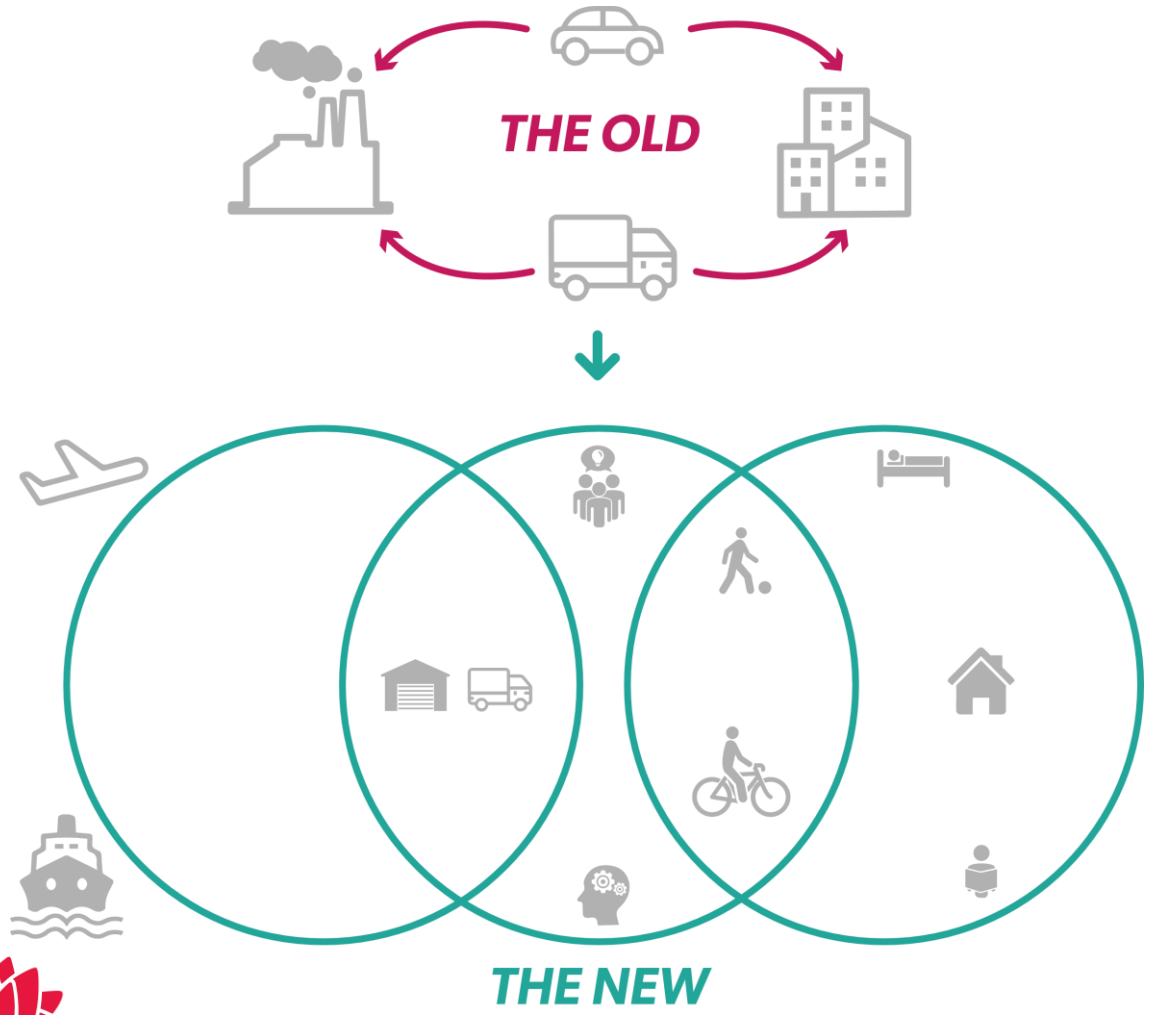




The Department's regional plans identify the importance of improving and supporting the agricultural supply chain as a driver of economic growth.

Source: CSIRO

The way we move freight is changing



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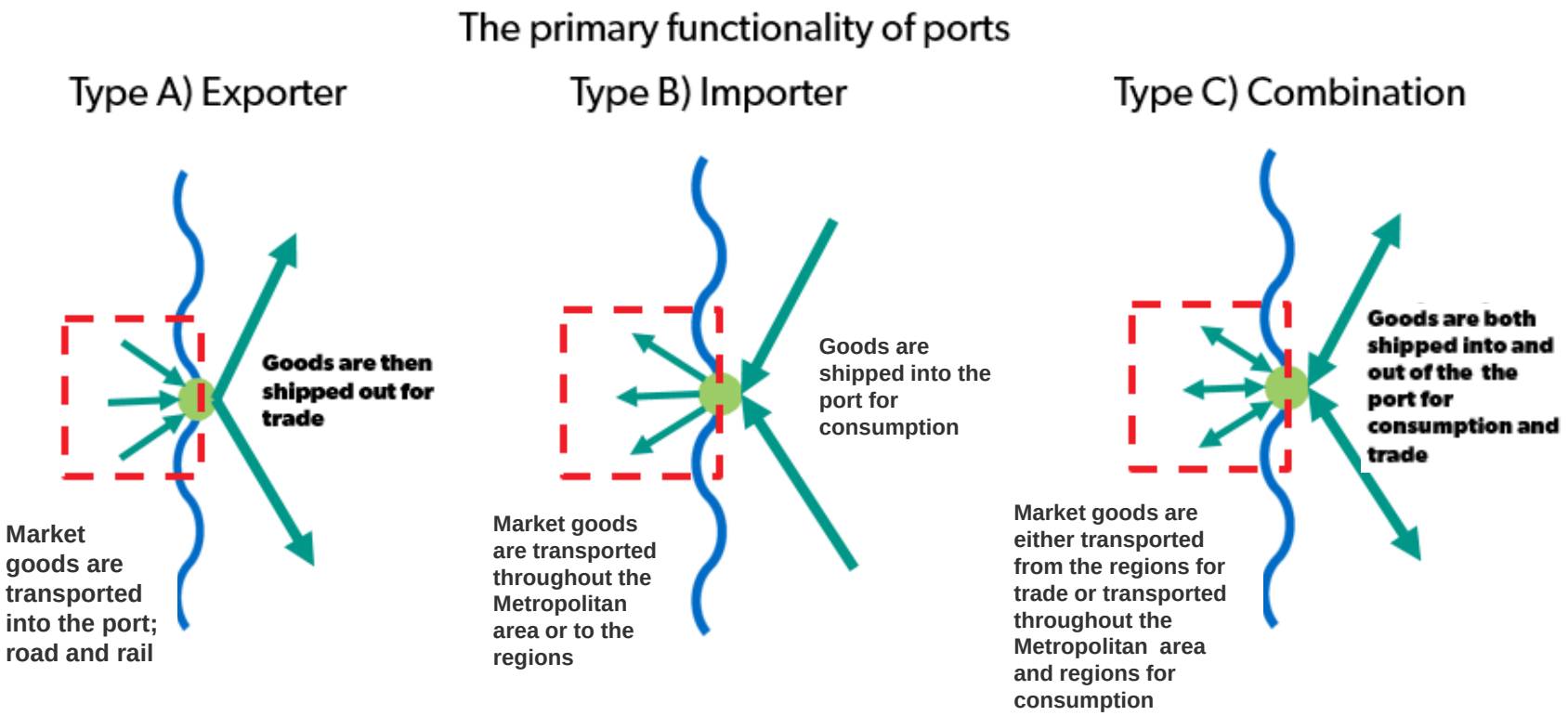
For instance, sea ports

Key nodes in the transport and distribution of freight internationally and domestically

Figure 20: NSW Ports

Connectivity between ports and the areas they service



Strategic land use planning needs to consider the functionality of particular port and the implications within the broader regional context.

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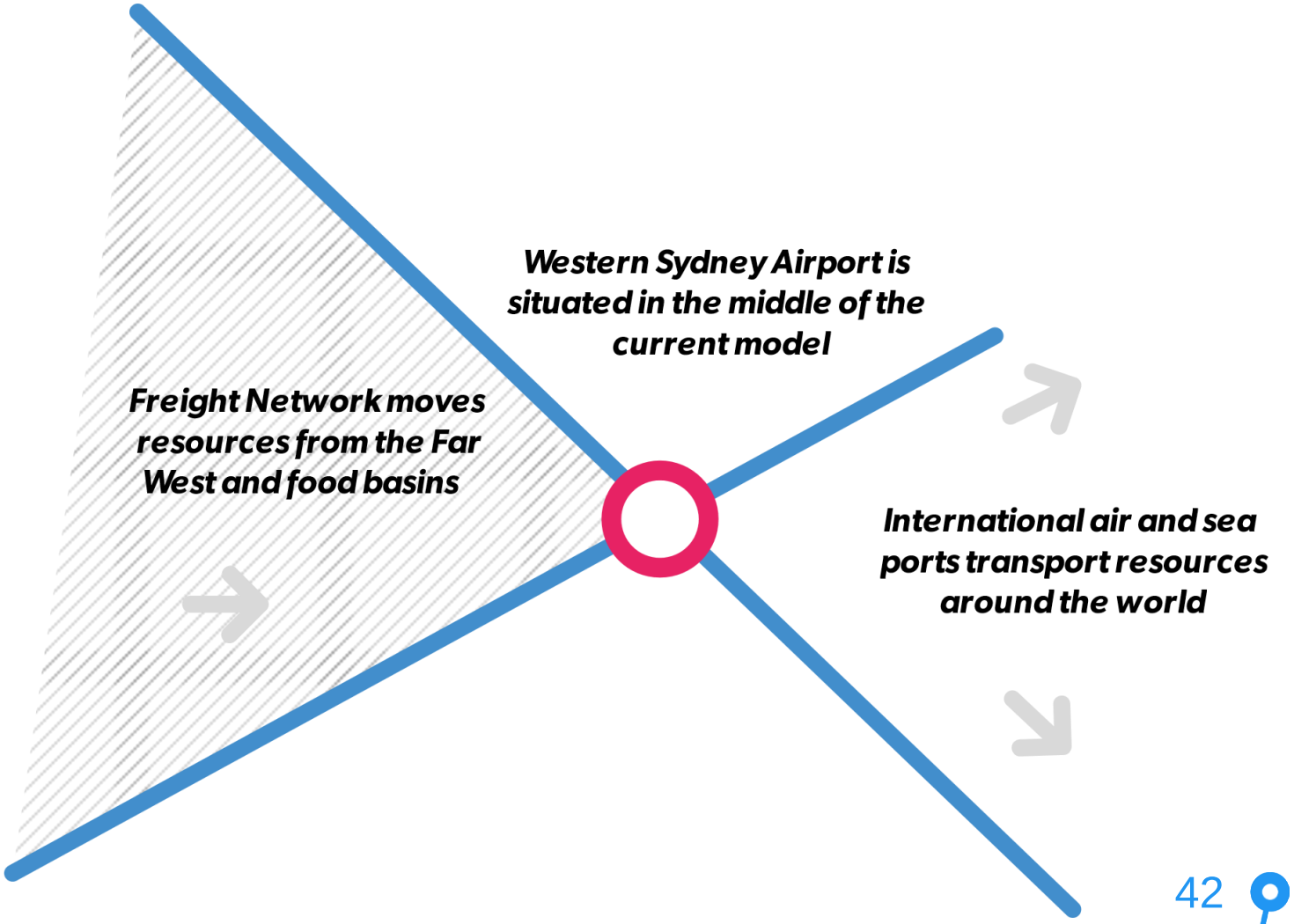
For instance, Western Sydney Airport

- The Western Sydney Airport provides a unique point of intersection between the production and recovery of resources in the west and distribution points in the East (air and sea ports).
- The airport will unlock land and reshape the jobs geography in Western Sydney around freight and logistics, agriculture and food as part of the supply chain.



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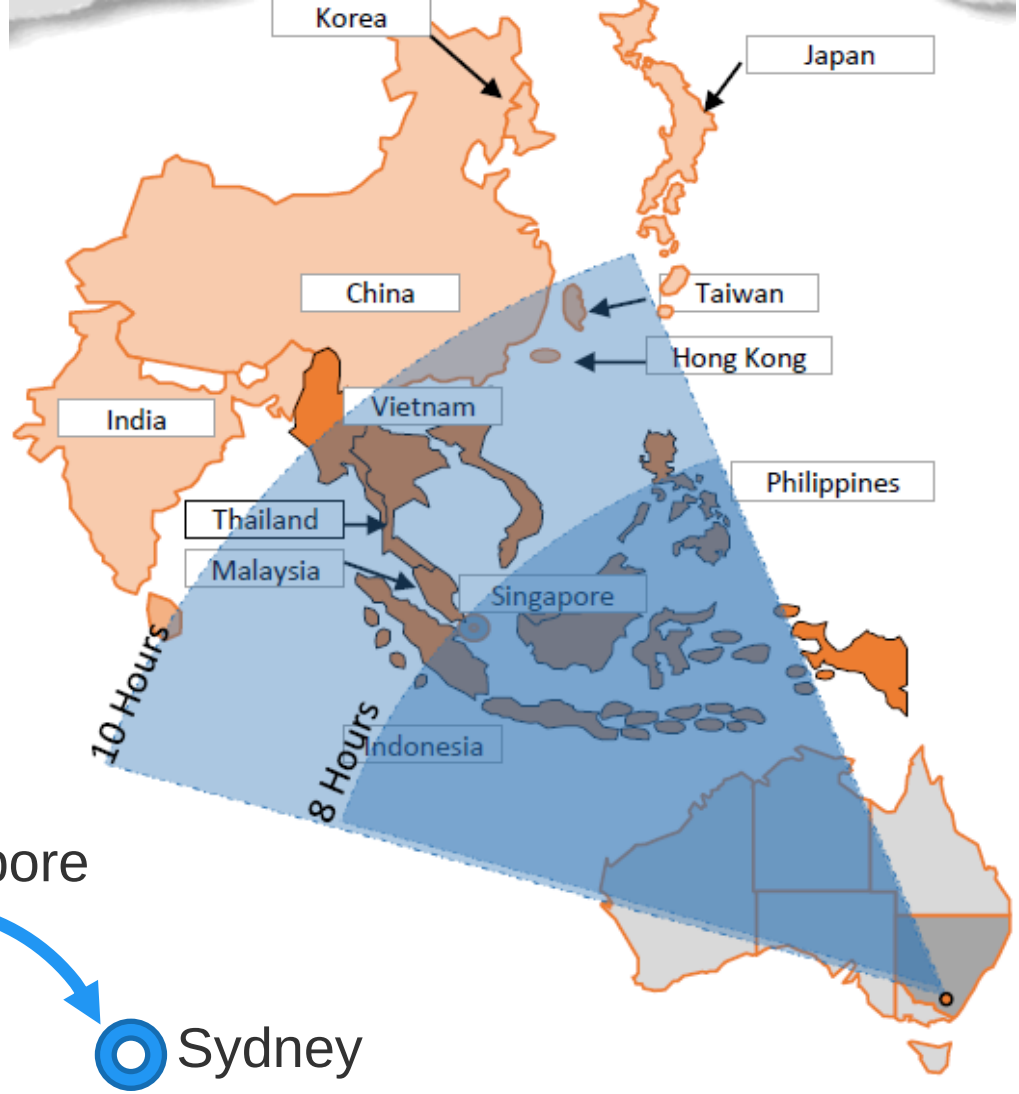
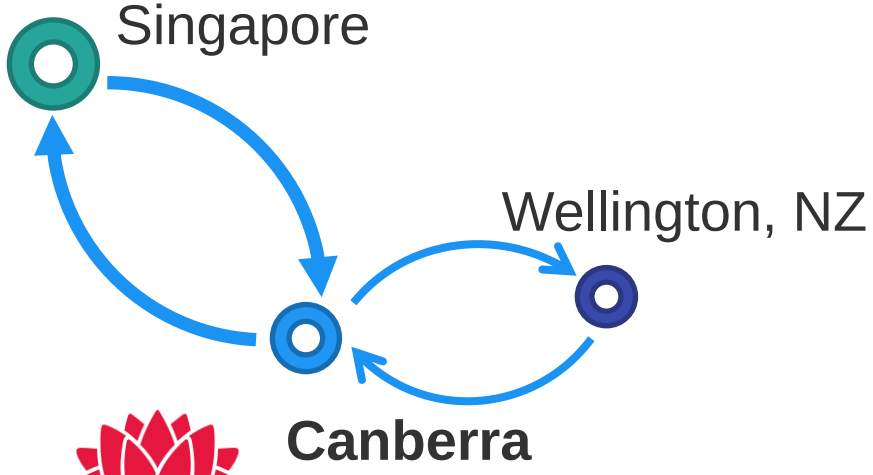
For instance, Canberra Airport

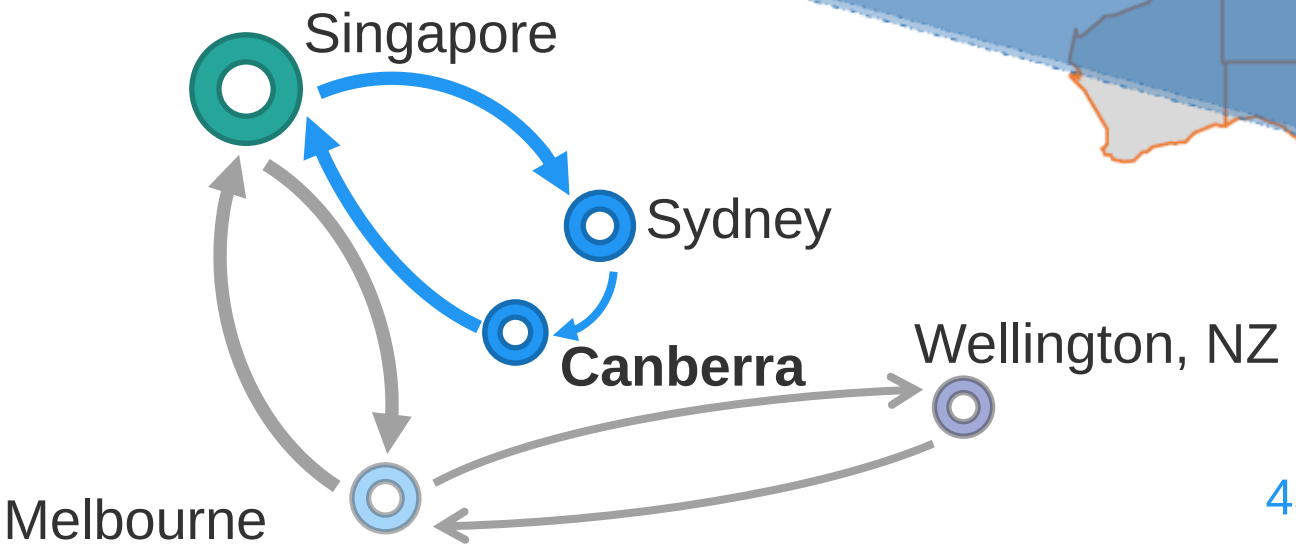
Regional produce and freight from the Central West and Orana, Riverina Murray and Southeast Tablelands could be distributed to Canberra Airport to increase Australia's freight connectivity to global markets.



Current



From 1 May 2018

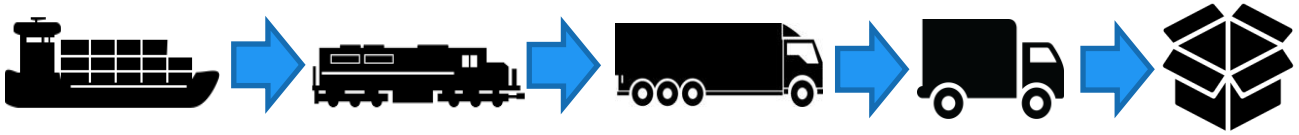


For instance, intermodal terminals

Intermodal terminals are essential if we want to increase the freight volumes efficiently.

Terminals allow for an increased level of flexibility and the potential to facilitate a freight system that operates 24/7.

Intermodal terminals are part of the decanting exercise
Receiving & Distribution



For instance, an intermodal facility

For instance, the Inland Rail project

The potential access to new global markets that will be enabled through the Inland Rail project providing new conditions to global gateways such as the Brisbane West Wellcamp Airport will offer new opportunities for regional NSW.

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Automation of farm equipment

The agricultural industry is evolving as technological advancements offer new and improved ways of farming.

Mulyan Farmers, Cowra NSW

Ed Fagan (2015 Farmer of the Year) has partnered with University of Sydney's Horticulture Robotics Centre to deliver harvesting equipment, which automatically picks, sorts and packs asparagus according to the size and quality of the stalk.

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Automated pesticides

This is a production prototype robot for intelligent perception and precision application (RIPPA). The robot automatically identifies and applies pesticide to weeds at high speeds using a directed micro-dose of liquid.

“Automation changes so quickly that the immediate future is what is going to happen in the next ten years”

Professor Salah Sukkarieh, Director of Research and Innovation, Australian Centre of Field Robotics, University of Sydney

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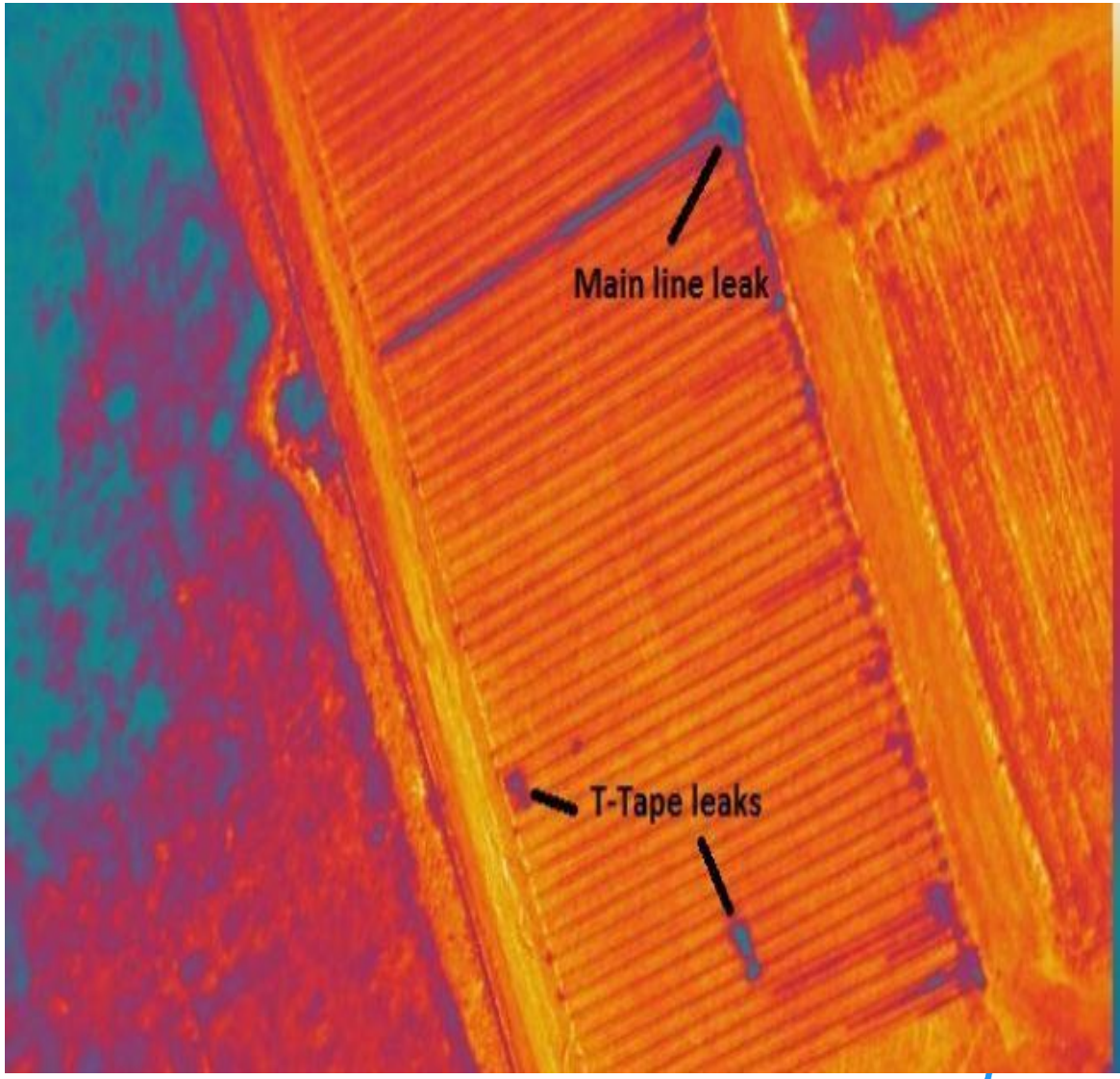
For instance, drones for water management

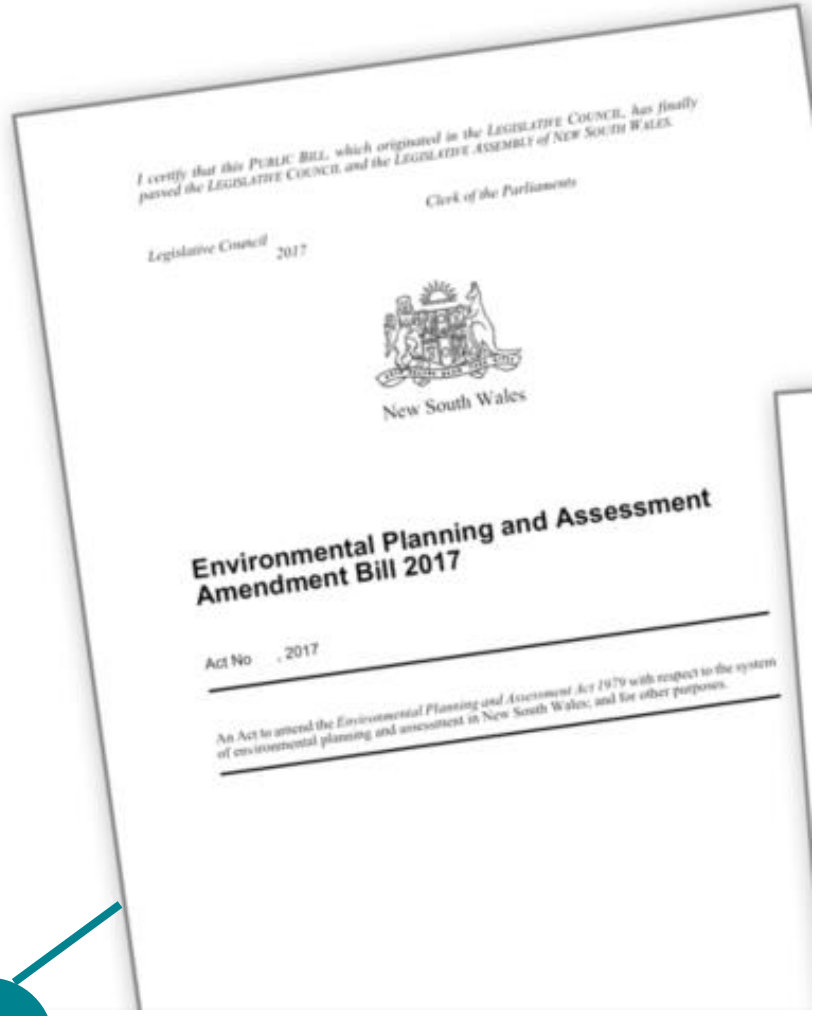


3

A process for managing change

A refocused planning system

1 For the first time in NSW there are **Regional Plans** for the whole state



I certify that this PUBLIC BILL, which originated in the LEGISLATIVE COUNCIL, has finally passed the LEGISLATIVE COUNCIL and the LEGISLATIVE ASSEMBLY of NEW SOUTH WALES.

Clerk of the Parliaments

Legislative Council 2017

New South Wales

Environmental Planning and Assessment Amendment Bill 2017

Act No . 2017

An Act to amend the *Environmental Planning and Assessment Act 1979* with respect to the system of environmental planning and assessment in New South Wales; and for other purposes.

2 Updates to the **Environmental Planning and Assessment Act** (Local Strategic Planning Statements)

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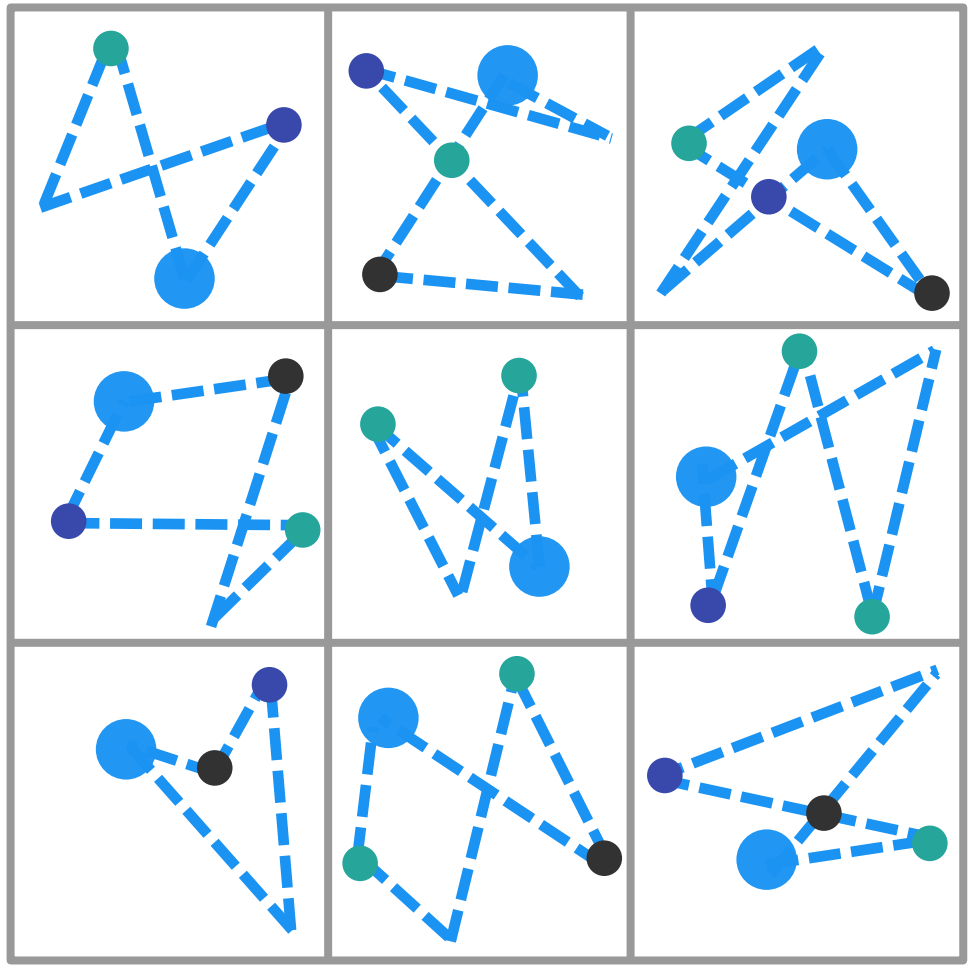
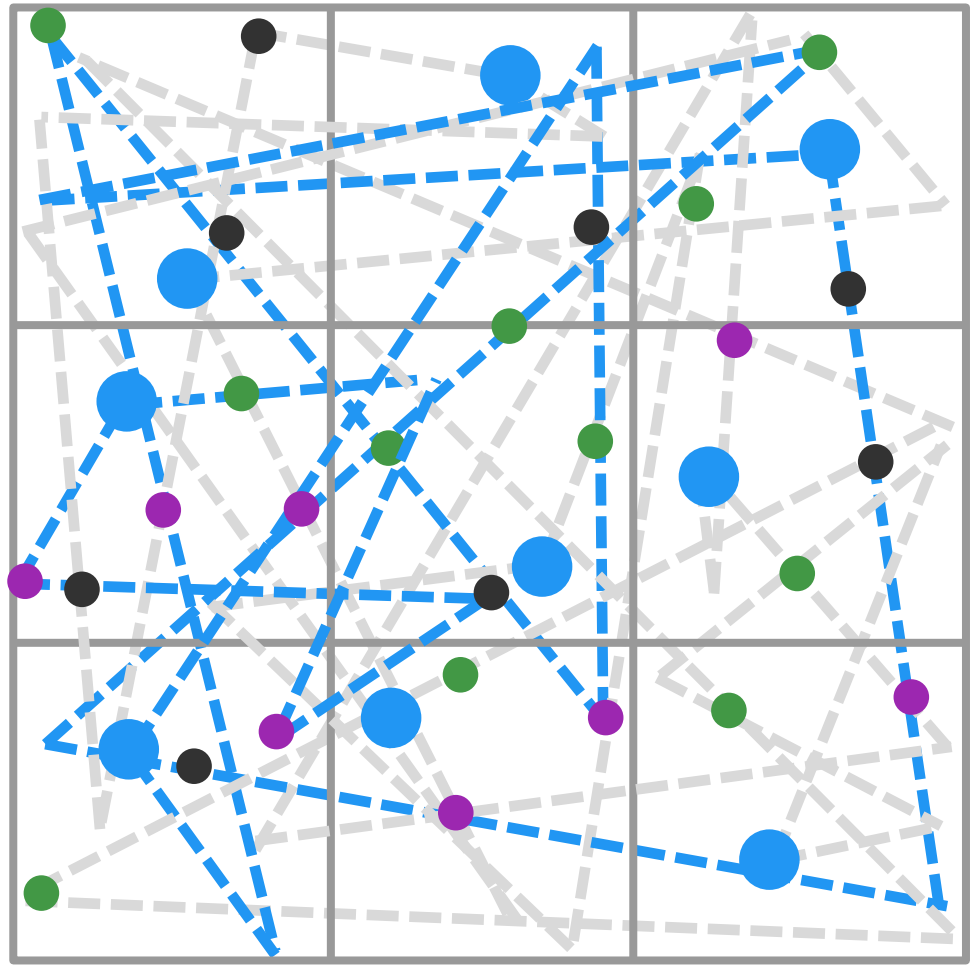
The regional activity framework

How people move



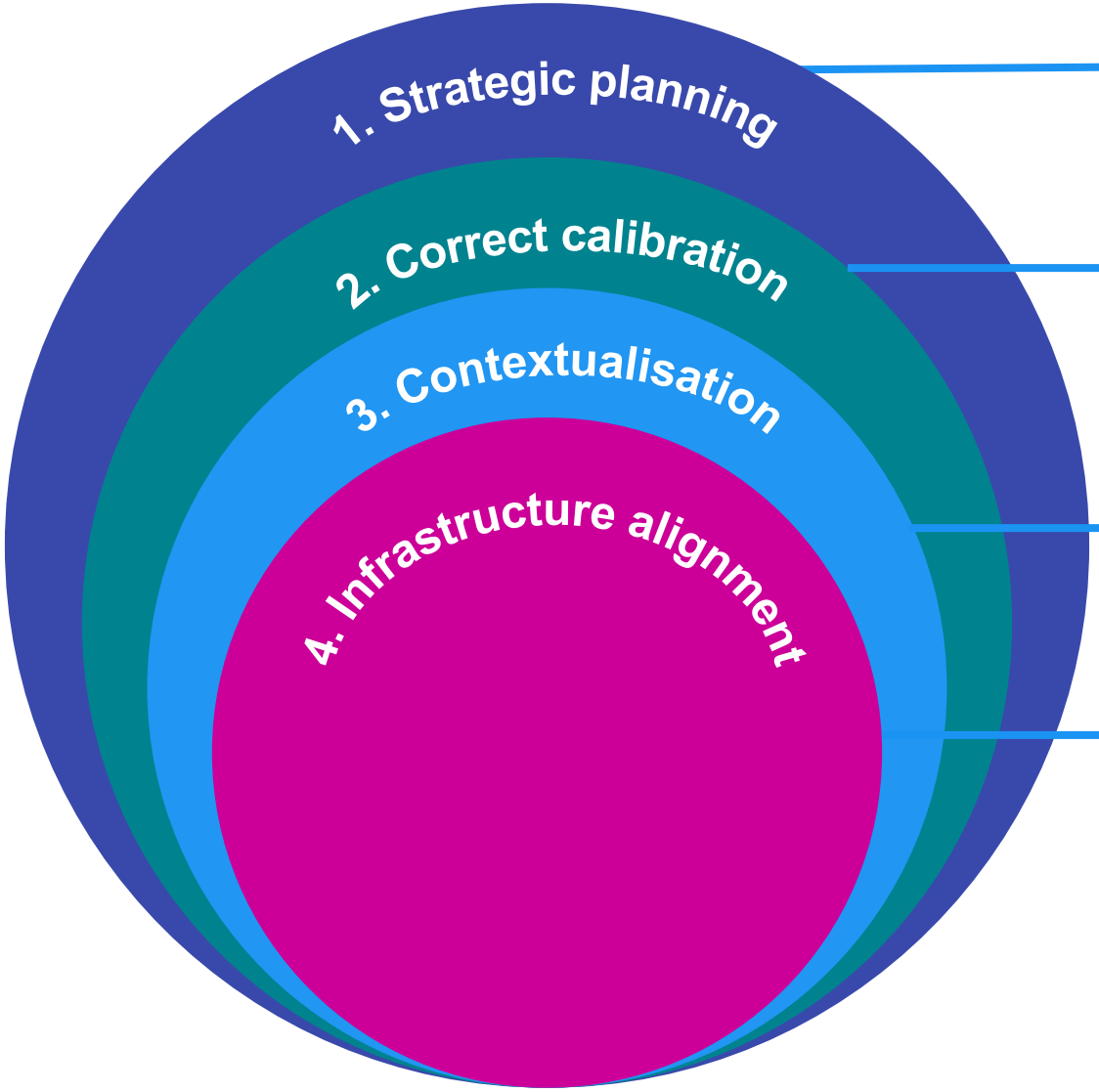
The presumed activity framework.



This is the true activity framework in reality.

It is much like

Four elements of a competent planning system



- Informs a selection of planning tools and infrastructure delivery.
- Alignment of levels of assessment to strategic intent and outcomes.
- Plans are influenced by higher levels of planning. ‘Line of Sight’
- Investment across sectors should align to the strategic framework, delivering the intent.

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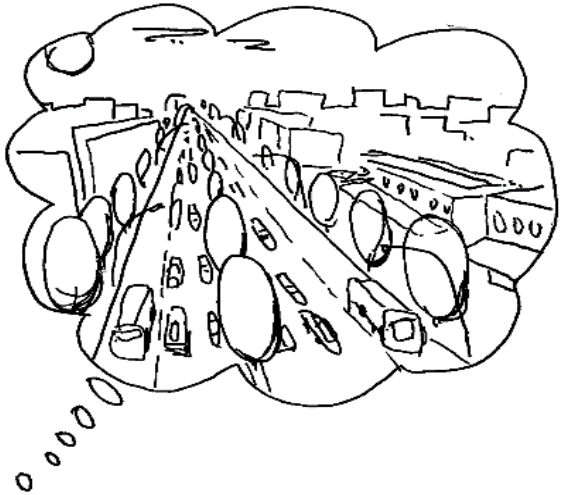
1. Strategic planning

A good strategic plan tells the 'particular' story of a 'particular' place

What is the place? Where is the place heading?

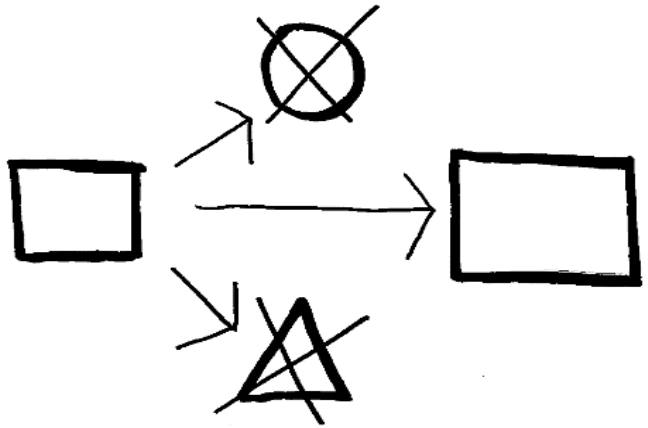
Consideration of statistics and trend analysis

What does the place want to be?



The vision

How will the place get there?



An action plan

The community has a wealth of local knowledge regarding the character of an area. Strategic planning needs to take note of this in its visioning process.

What is the place? Where is the place heading?

As the first step of strategic planning, answering these questions involves analysing statistics and trends to identify the current community profile and to understand the potential future scenarios of change.

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What does the place want to be?

Step two involves deciding what change will be achieved by developing a vision for a particular place or locality.

Setting clear planning principals and objectives will help guide stakeholders to deliver the vision.

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How will the place get there?

To implement the planning principals and objectives and achieve the vision, an action plan must be put in place.

An action plan is comprised of strategies and actions with clear and measurable outcomes.

Reporting on the implementation of these actions is essential to monitoring the success in achieving the vision.

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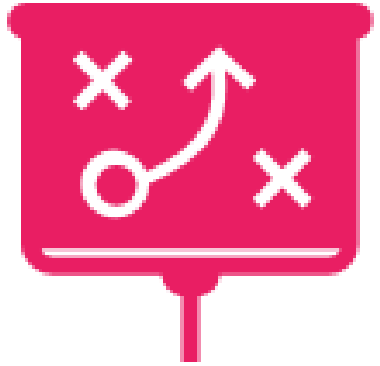
The value of strategic visioning

Visioning is a planning process through which stakeholders create a shared destination and begin to work towards that goal to make it a reality. The initial vision can act as a motivational force and encourage people to cooperate.



Vision

A deliverable action plan

Destination

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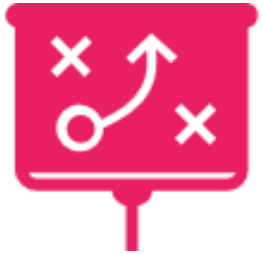
The New Oregon Model of strategic planning

Where are we now?	Where are we going?	Where do we want to be?	How do we get there?	Are we getting there?
				
Community profile	*Trend analysis*	*Vision statement*	*Action plan*	*Implementation and monitoring*

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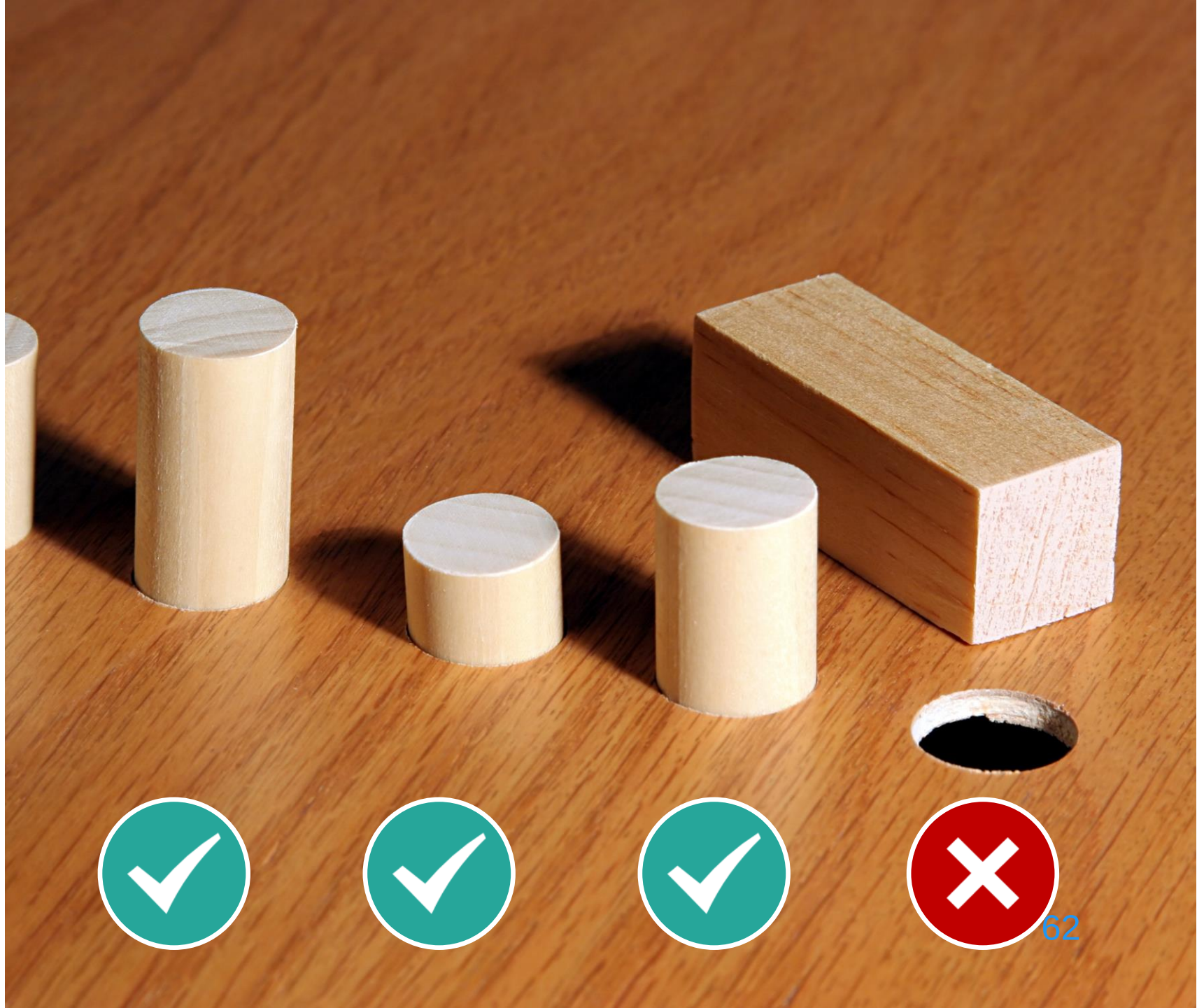
2. Correct calibration

The strategic plan should clearly outline how the vision will be implemented. This will help the community see how their story will materialise and provide a sense of security in a period of change.



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Delivery frameworks

Delivery frameworks should be correctly positioned to enable the strategic intent of the plan to be achieved.

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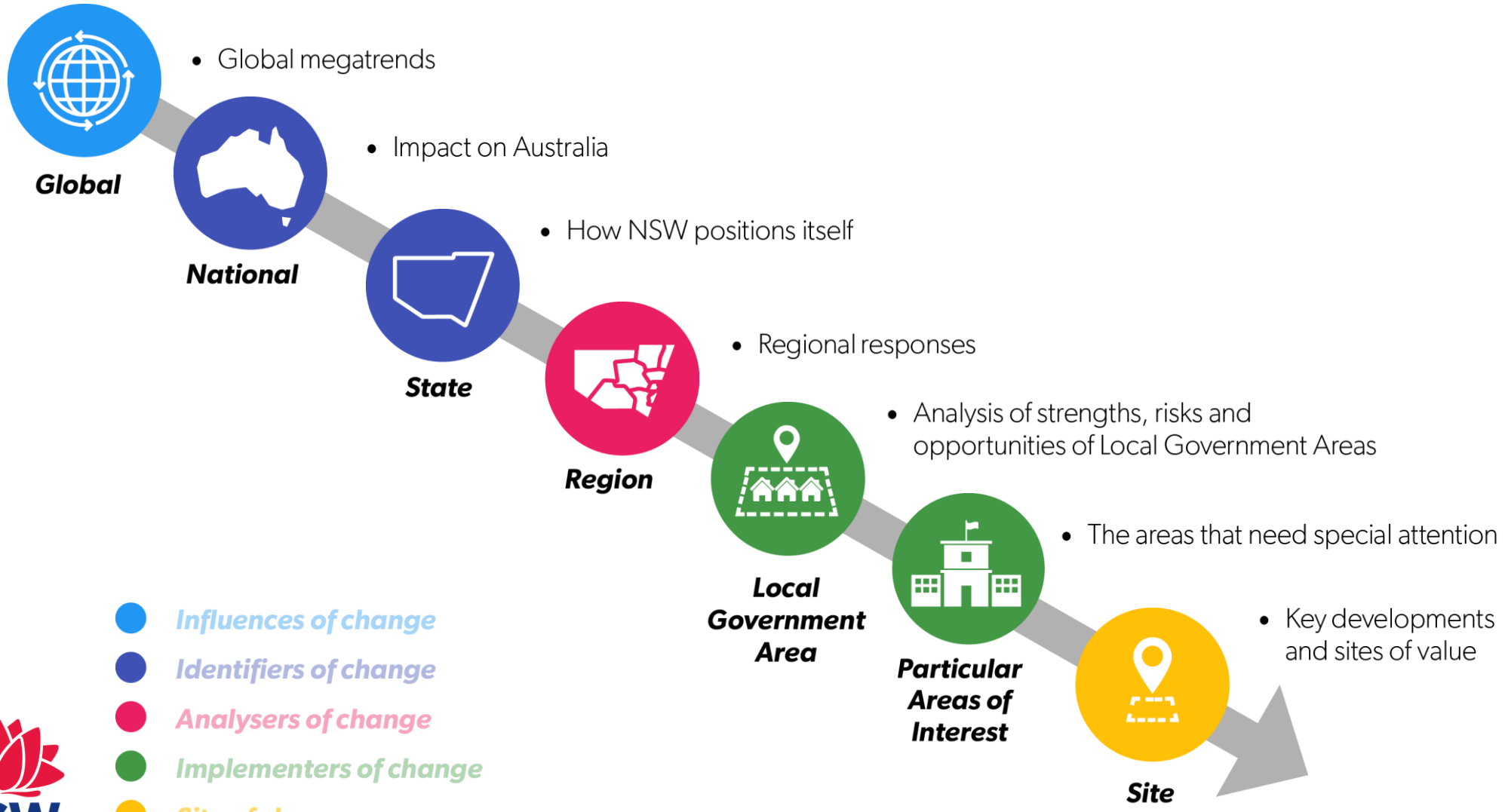
3. Contextualisation - establishing a strategic line of sight



- Influences of change
- Identifiers of change
- Analysers of change
- Implementers of change
- Site of change

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The strategic planning framework informs the statutory planning framework

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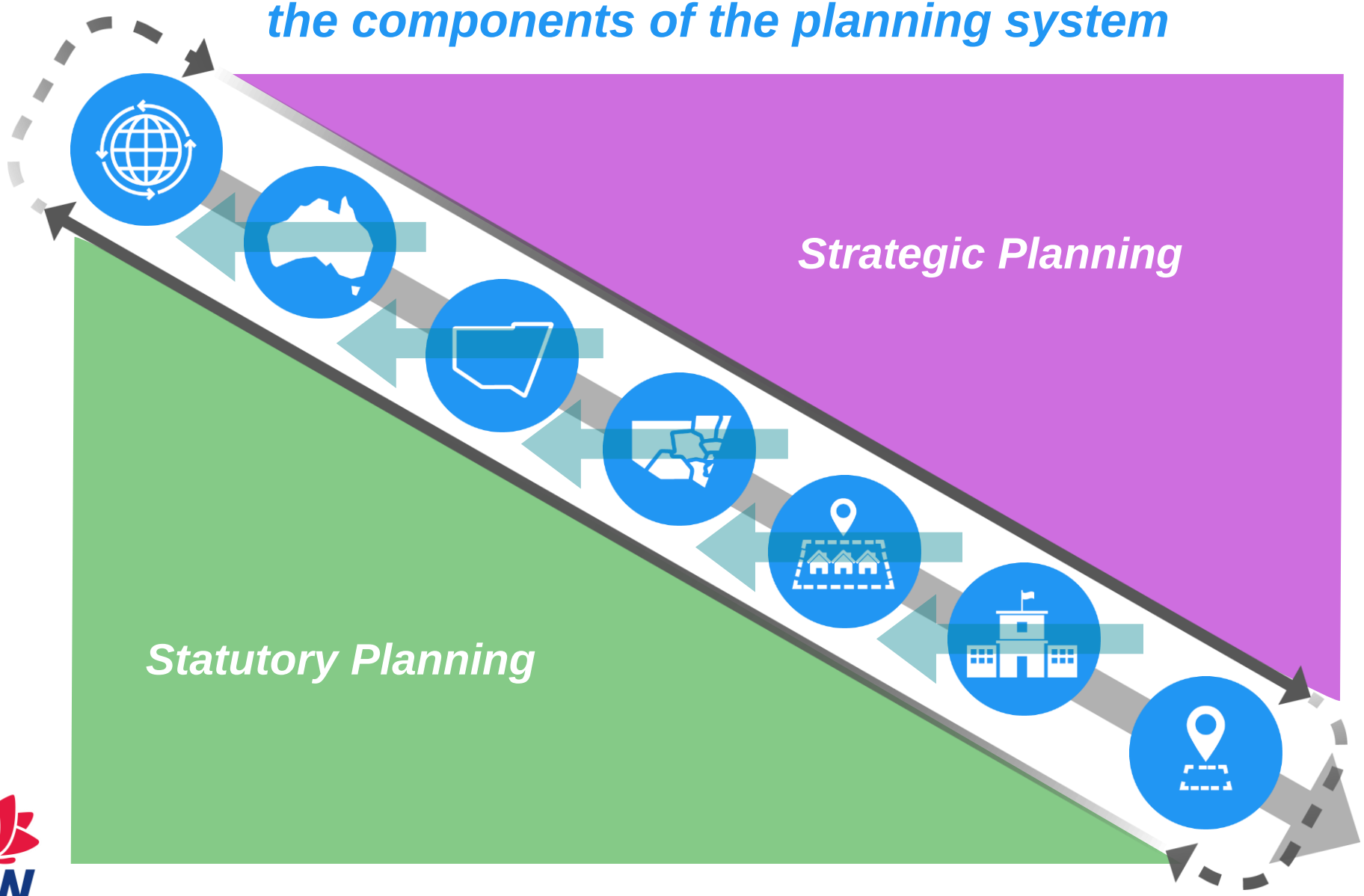
Contextualisation of planning documentation will align the components of the planning system



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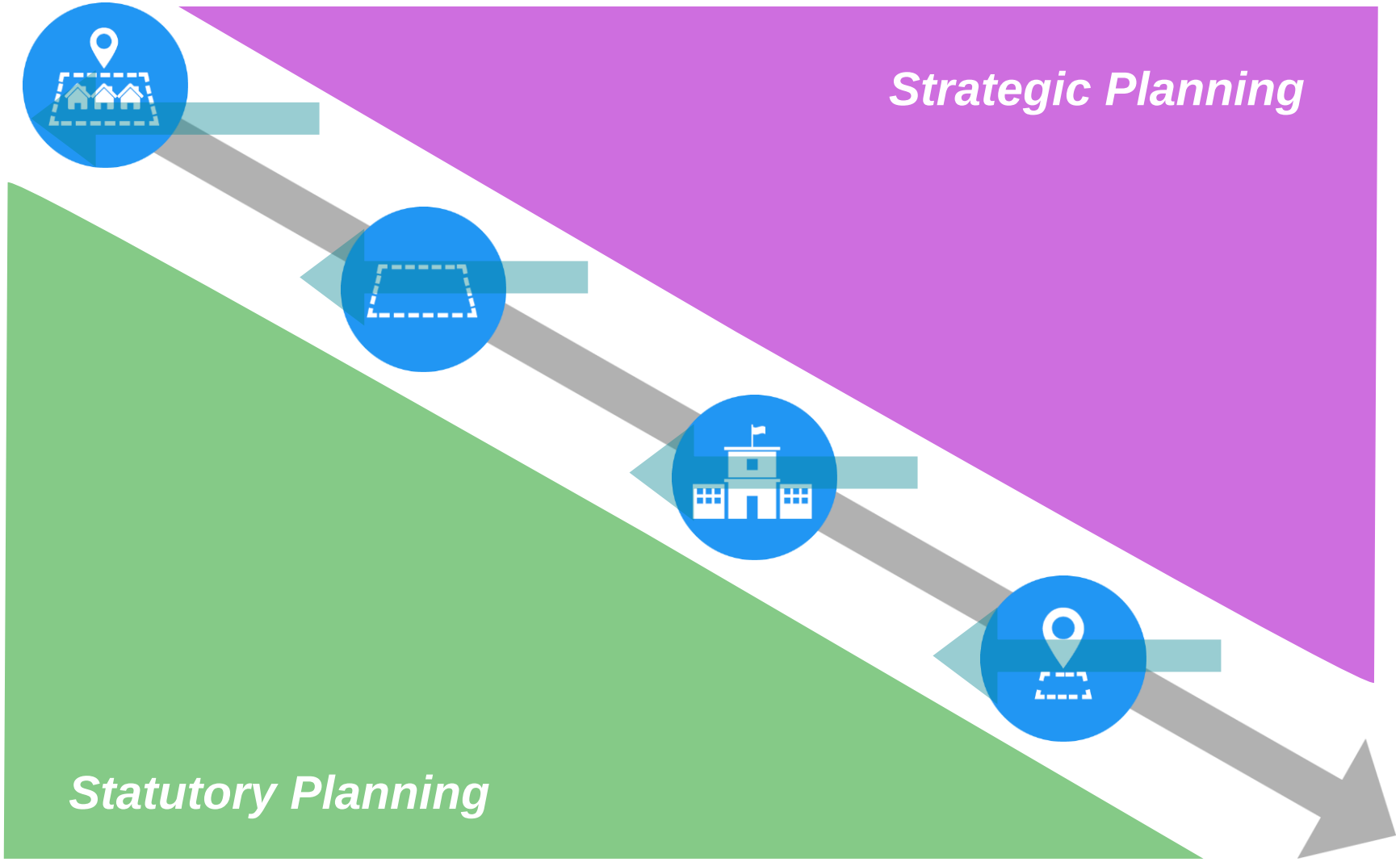
Strategic planning documents inform local planning decision making



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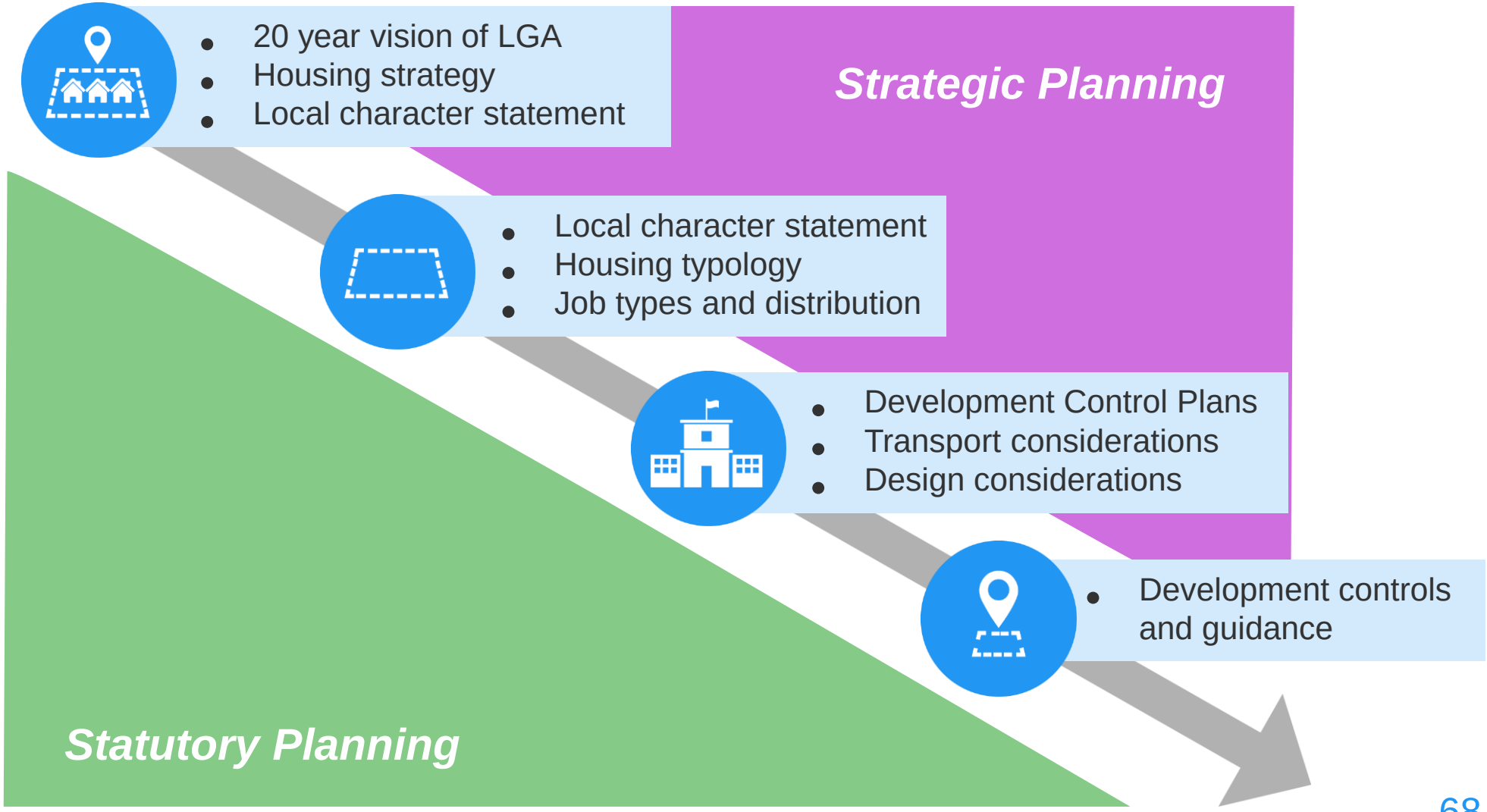
The local planning framework within the planning system



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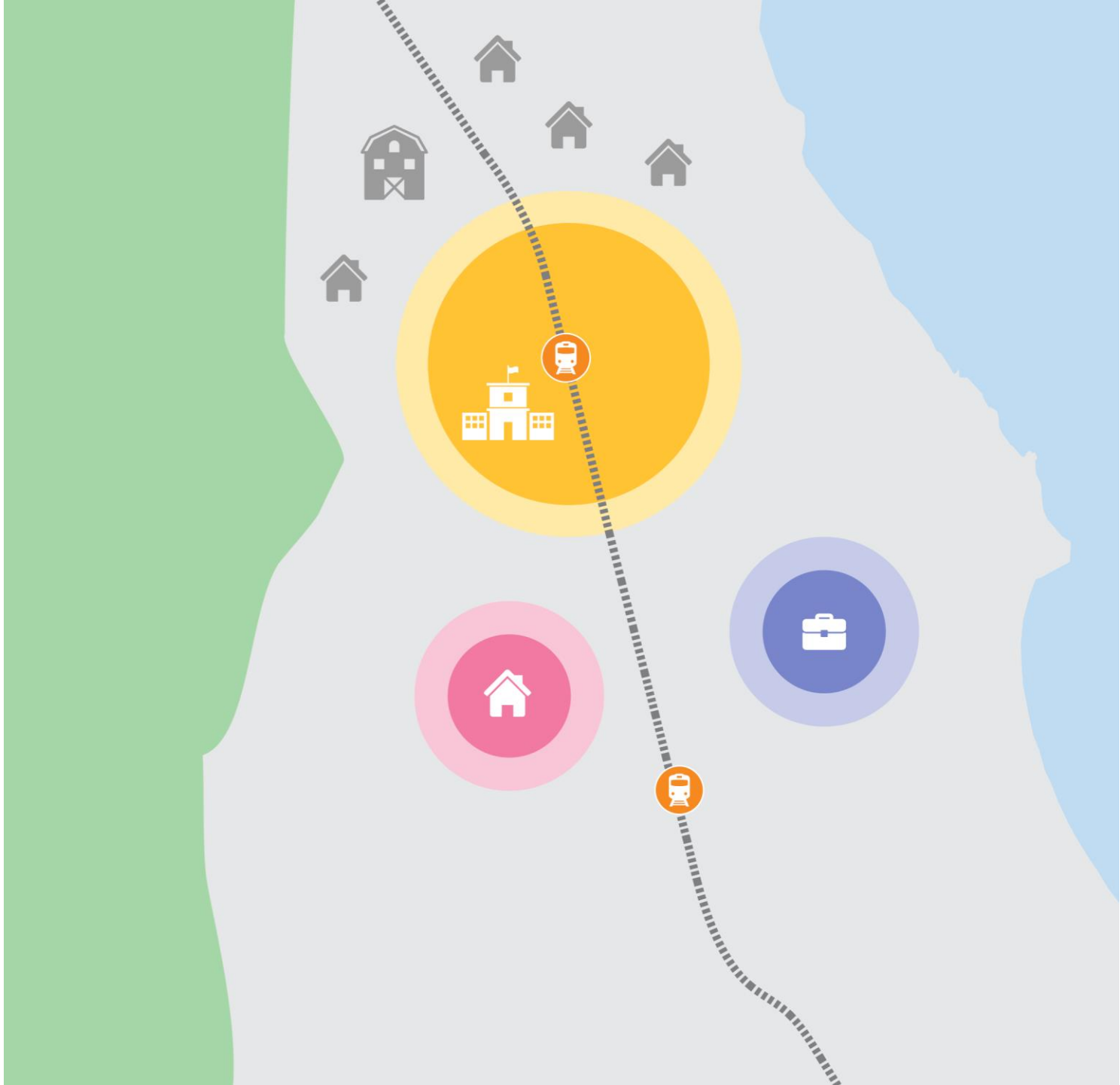
For instance, a local strategic planning statement may…

set out a strategic narrative about a local government area that will identify the key spatial elements such as:

- existing town centre with village character on train line
- respond to regional plan for additional housing to the south
- new employment precinct also required near housing
- identify coastal character (east) and environmentally sensitive corridor (west)



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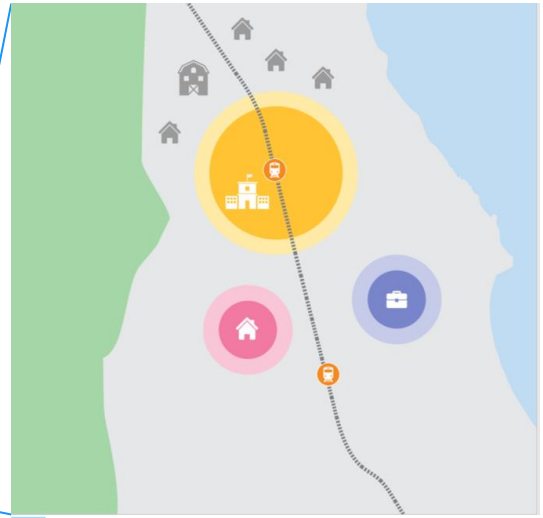
Local Government Area

- Local strategic planning statement



Precinct

- DCP for planned employment precinct
- Community statement for planned residential precinct

Town Centre

- Town centre local character statement (LEP overlay) and DCP

Site

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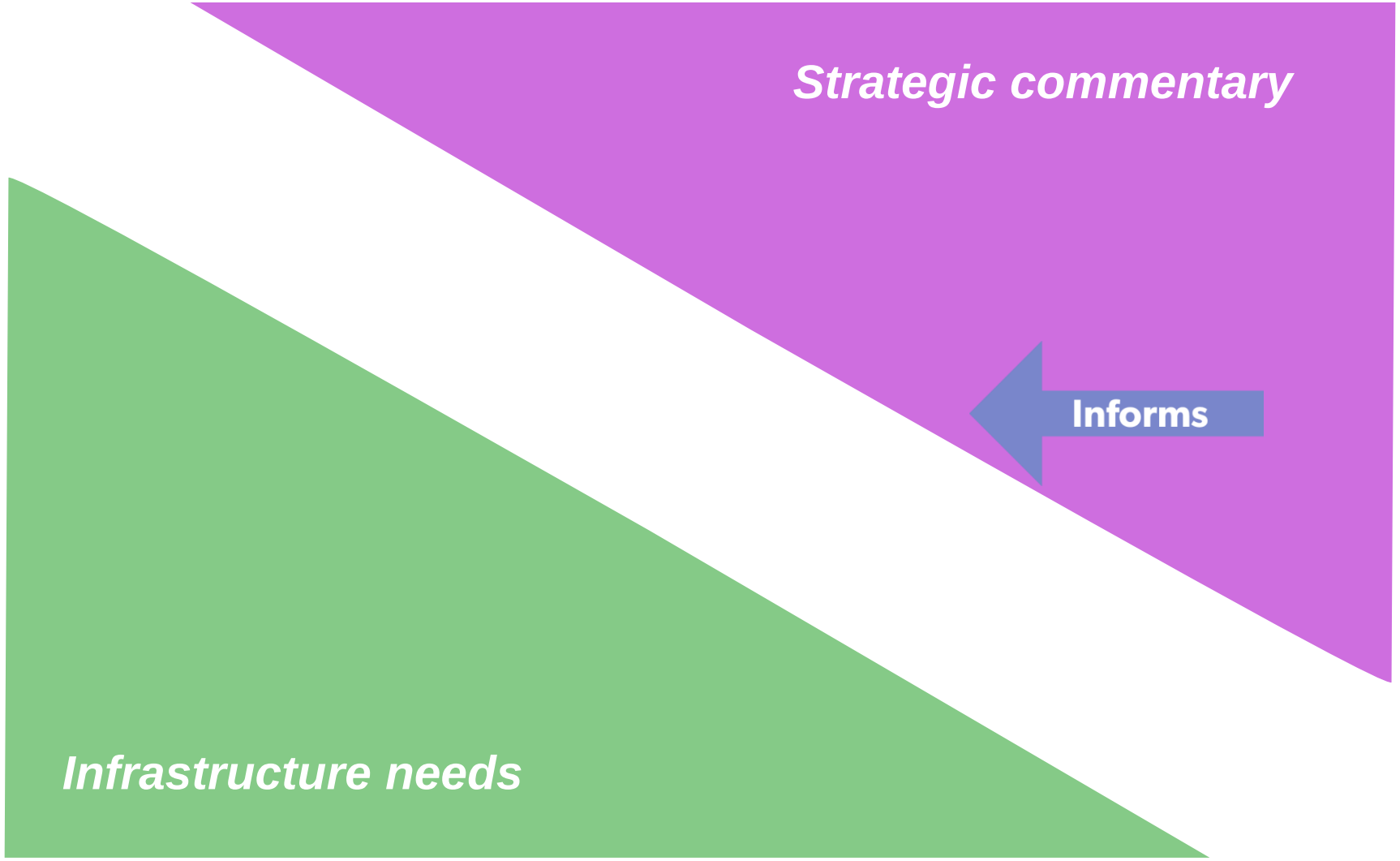
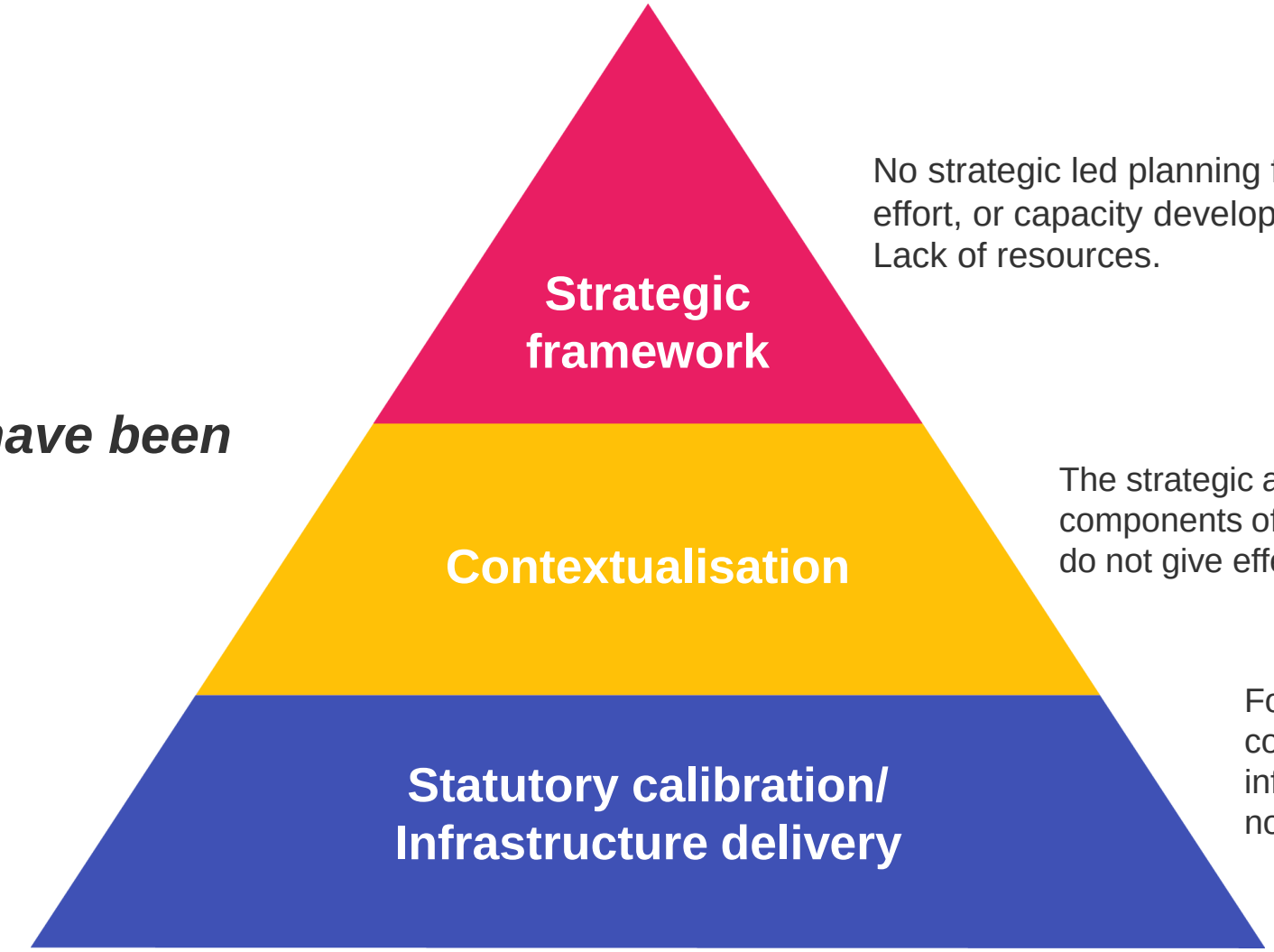
4. Infrastructure alignment



Refocusing the planning system

Where we have been



No strategic led planning framework, effort, or capacity development. Lack of resources.

The strategic and statutory components of the planning system do not give effect to each other.

Focus on DA systems with a contested merit debate influencing decisions that have not aligned to a strategy.

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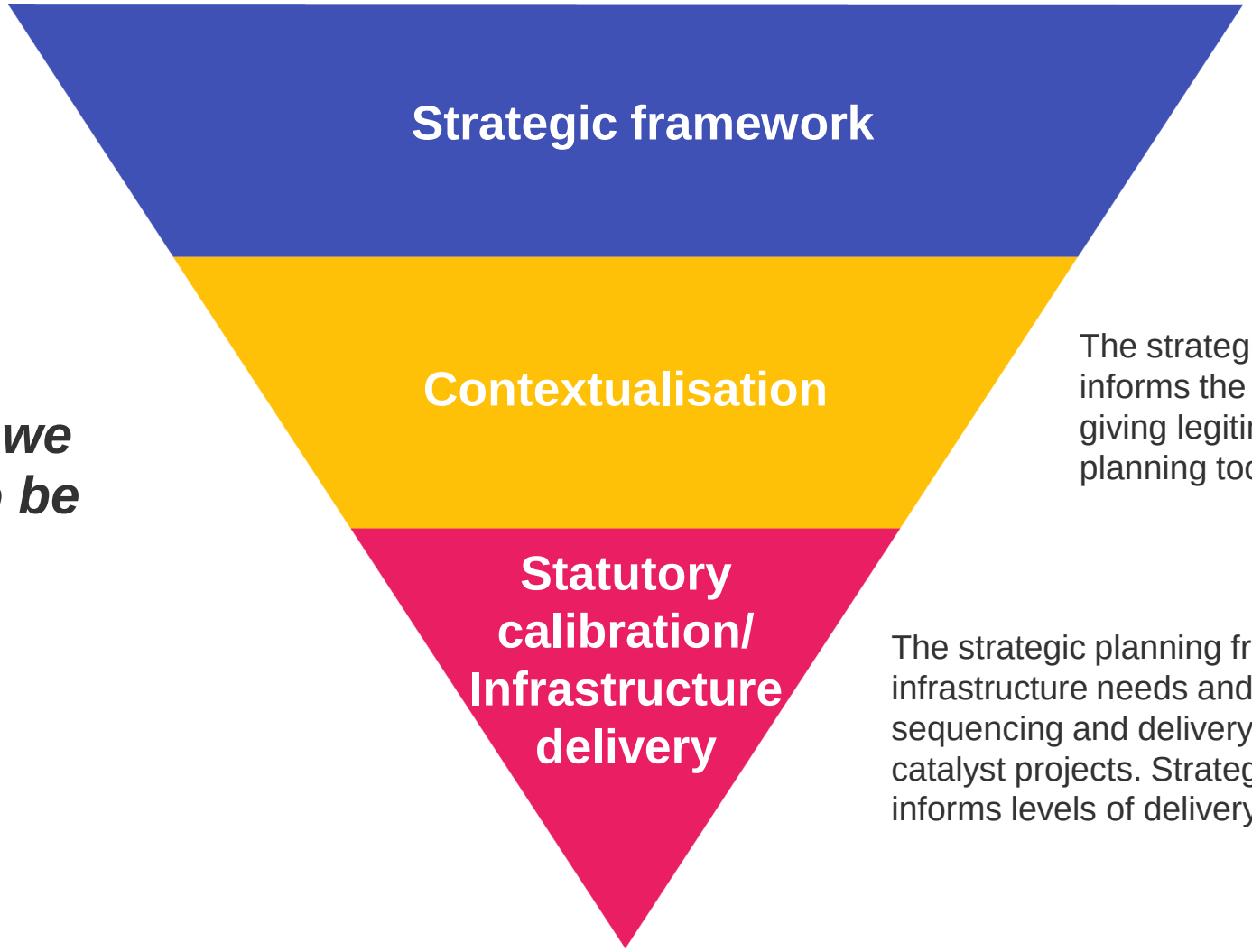
Refocusing the planning system

Where we want to be



The strategic planning framework addresses regional issues in the context of a particular place.

The strategic planning framework informs the delivery framework giving legitimacy to the selection of planning tools.

The strategic planning framework informs future infrastructure needs and their timing, sequencing and delivery; and will also identify catalyst projects. Strategic planning framework informs levels of delivery.

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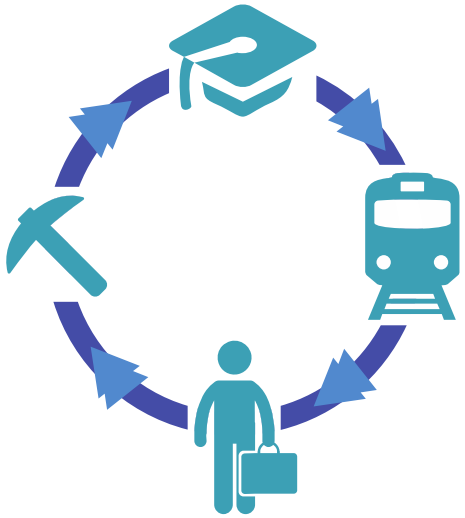
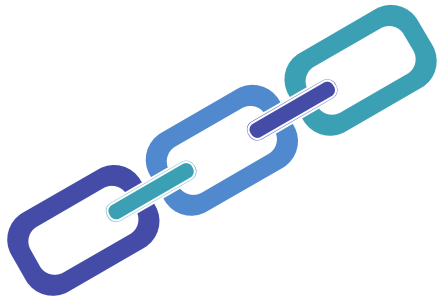
Key strategic drivers



Disruptors

Megatrends are connected and intertwined which suggests **‘synergetic’ opportunities**



Impacts and links

It is important to understand the eco-system of each megatrend and the elements of the **value chain** which are most profitable or likely to impact places

Colliding forces

These forces are changing rapidly and **bringing new competencies** into play at half the life cycle speed of the past decade

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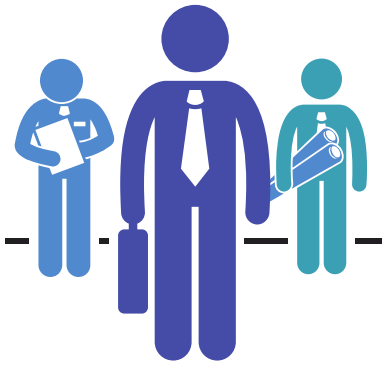
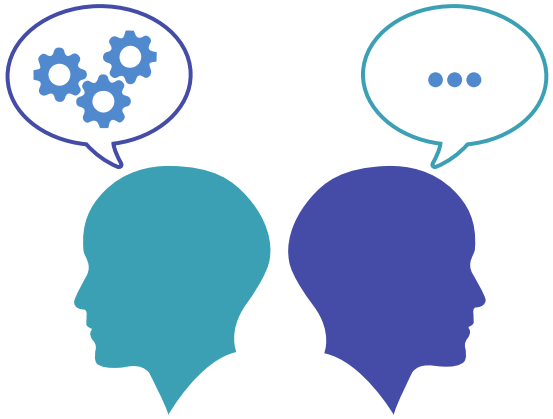
Key strategic drivers



Strategic thinking

Organisations need **'megatrend' champions and teams** to best exploit the opportunities



Opportunities taken

It is important to build healthy eco-systems around megatrend opportunities as it can be a source of **competitive advantage** for communities, places and businesses

Need counter strategies

To take into account **protection, migration, adaptation, positions**

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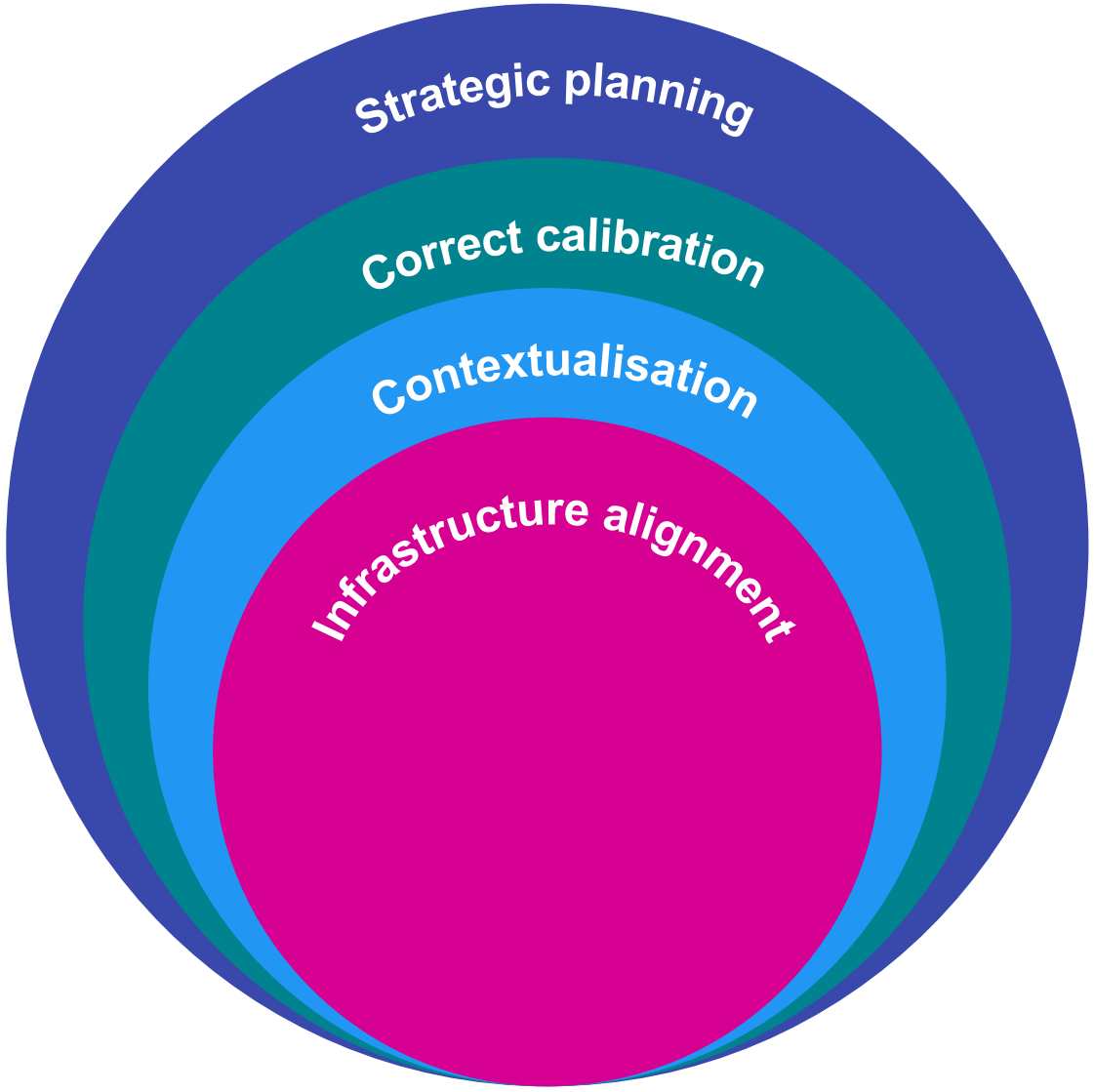
A competent planning system relies on



- Political will
- Competent professionals
- Good data and monitoring
- Appropriate capacity and resources
- Share responsibilities across government
- Evidence based policy and good legislative framework

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