Viable System Model guide

- The Viable System Model (VSM) was developed by Stafford Beer and sets out the *necessary* and *sufficient* conditions required for organisational viability. That is, the capacity to successfully adapt to changes in social, economic, technological, cultural and political environments.
- The VSM provides a theoretically and methodological robust way to managing complexity.
- The VSM can be used to design high performing organisations or evaluate weaknesses that impact on organisational sustainability.
- The VSM presents a generic model of organisation and can be applied 'system' including teams, organisations, communities and economies. For example, Foote et al. (2014) used the VSM to help a diverse set of stakeholders design an integrated approach to addressing family violence in New Zealand.
- We recommend its application for complex public health interventions such as those developed using the He Pikinga Waiora framework.
- The VSM posits that a viable organisation requires five subsystems. These are:
  - **System 1 - Operations** ('the doing bits of a system') which deliver the goods and services to achieve the organisation's purpose. Operational units interact with organisation's external operating environment including clients, communities and other organisations.
  - **System 2 - Coordination** which ensures that the various operational units work together in a way that avoids 'sub-optimisation' (e.g., standardisation, scheduling of resources).
  - **System 3 - Management** which ensures that the various operational units are appropriately tasked, resourced, and held accountable for their performance. System 3 manages for 'collective impact' (cf: System 2). The management subsystem is responsible for ensuring that any organisational policies are communicated.
  - **System 4 - Intelligence** which tracks developments in the external operating environment, and identifies opportunities and threats.
  - **System 5 - Policy** which sets purpose and ethos of the organisation, and ensures that the 'inside and now' orientation of the System 3 - Management subsystem is balanced with the 'outside and future' orientation of the System 4 - Intelligence subsystem.
- These subsystems are organisational *functions* are not **necessarily** the responsibility of any one individual or group.
- The VSM also highlights the important role that information and control channels play in ensuring that the five subsystems are in *balance*. Key homeostats include:
  - **System 1 and 3 relationship** where operational goals, resourcing and accountability arrangements are determined;
  - **System 1, 2 and 3 relationship** that ensures the operational units have necessary autonomy to respond to any challenges;
  - **System 3 and 4 relationship** where decisions about *how* the organisation will adapt to changes in its external operating environment are made; and
  - **System 3, 4 and 5 relationship** which resolves conflict between short vs. long term and internal vs. external perspectives.
- Figure 1 sets out a viable system representation of a family violence prevention system.
- Organisational pathologies ('problems') occur when subsystems are missing, ineffective or not in balance. For example, a weakly developed (or non-existent) System 5 - Policy

subsystem can lead to lack of agreement on organisational purpose leading to lack of clarity about what activities will make a difference.

- The VSM provides a template that can be applied at different levels defined by geography, target population etc (e.g., local, regional, national). This recursiveness considerably reduces the complexity associated with multi-level comprehensive public health interventions. In this way, a viable system at the national level can be decomposed into a number of viable systems at the regional level (e.g., regional services), which in turn can consist of a number of viable systems at the local level (e.g., specific services).
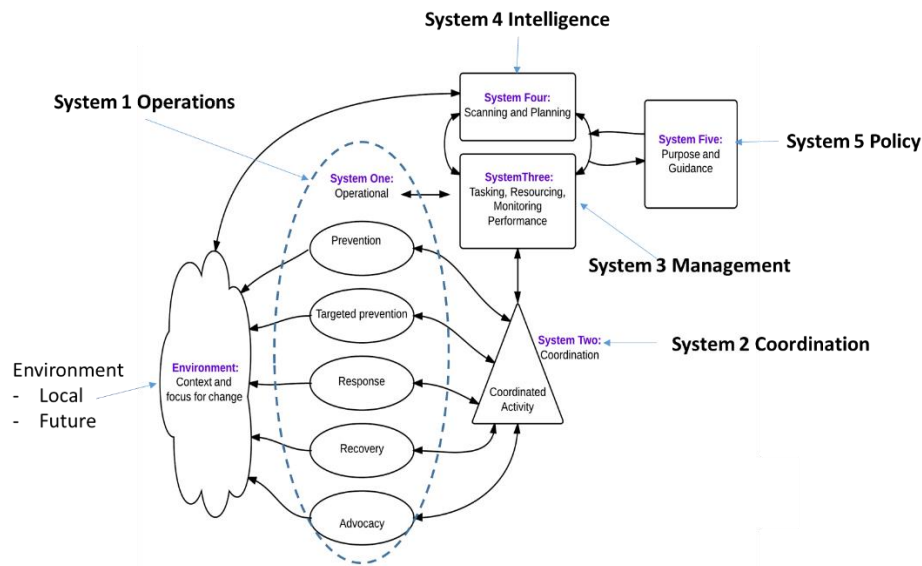

Figure 1: VSM (Adapted from Foote et al., 2014)

VSM Template

1. Identify a 'system in focus' e.g., public health intervention, a cross-sector collaboration, a health service.
2. Develop an appreciation of the 'system in focus'
   a. Undertake a stakeholder analysis (see stakeholder analysis guide)
   b. Identify key issues, problems and opportunities
3. Define the purpose of the 'system in focus'
   a. Utilise PQR or CATWOE method (see soft systems methodology guide).
4. Collect views from key stakeholders about the presence and effectiveness of System 1 – 5 and homeostats. This template utilises Hildbran and Bodhanya's (2015)[1] diagnostic questions:
   a. What are the main operations of the system?
   b. How do the operational units relate and work together?
   c. How are the operational units coordinated? What mechanisms ensure operations run smoothly?

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[1] Hildbrand, S., & Bodhanya, S. (2015). Guidance on applying the viable system model. *Kybernetes*, *44*(2), 186-201.

      d.   What are the important committees, procedures and structures that facilitate the good operation of the system?

      e.   Who is managing the system as a whole and through what mechanisms?

      f.   How are resources allocated, and accountability negotiated?

      g.   Who is looking at future trends, opportunities and threats, and investigates their impact on the system in the long term? How are plans made to deal with them?

      h.   Why does your system exist in the way it does, and what binds this system together?

5. Based on (4) identify organisational strengths and weaknesses including any pathologies.
6. Develop improvements to enhance the viability of the 'system in focus'.

References:

Foote, J., Taylor, A., Nicholas, G., Carswell, S., Wood, D., Winstanley, A., and Hepi, M. (2014). Toward a transformed system to address child abuse and family violence in New Zealand. Commissioned by The Glenn Inquiry. Institute of Environmental Science and Research Limited, Christchurch.

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