

## **ANNEX 5.1: MAIN SYSTEM DESIGN PRINCIPLES**

Each of the main system components should be designed so that when the system has been fully implemented, it may be operated in a sustainable manner. A number of generally acceptable design principles have therefore been elaborated, arising from the consultant's field surveys and interviews. These design parameters have also closely looked at the SSATP transport indicator systems implementation experiences, so as to avoid any unnecessary pitfalls in systems design.

### Common acceptance amongst system participants (Buy-in) and by End Users:

1. The fundamental data underlying the system should be of reliable and verifiable content, so as to ensure user confidence.
2. Quality assurance needs to be undertaken for all system components: data collection, collation, analysis, storage and dissemination.
3. The system data should be kept current (through time-stamping and the principle of time delimited availability);
4. Procedural guidelines should be intuitive.
5. *Initial* data cycle should be undertaken at a (minimum) annual upload frequency.
6. The framework should have a supporting and co-ordinated organisational structure; one that is stable through time, yet flexible enough to cope with changing policy requirements;
7. The system should build, as far as possible, upon existing organisational and management structures,
8. The systems operations and management and communications must be fully protected by the latest and up-to-date security systems, to avoid system breach/ compromise which would lead to a reduction of user confidence.

Once data quality becomes unreliable, the system would start to lack credibility, and system usage would drop or diminish rapidly. Ideally, the user should be informed of the IQL of each indicator.

### System Sustainability

1. The cost of data collection, storage and dissemination must not be excessive;
2. Maximum use should be made of tried and tested technology in order to bring down the cost of system establishment and operations.
3. Lessons should be learned from the experience gained through the selection of transport indicators under the SSATP programme.
4. Procedural guidelines should be updated automatically, seamlessly and infrequently.
5. Transport Policies (and needs) change over time and therefore the system indicators must also be able to change accordingly.
6. System establishment costs should be affordable;
7. System operations and maintenance costs should be affordable;
8. Staffing requirements should be minimal, to minimise annual operating budgets;

9. Should have a centralised management structure, with supervisory board, to ensure that system is not hijacked by any inter-agency or inter-ministerial differences.
10. Some of the system services could be provided on fee-basis.

### Simplicity

1. The fundamental data underlying the system should not be too ambitious at system launch.
2. The initial system indicator data should focus on existing (baseline) transport sector input /output data. As system usage and reliability expands, then more complex derived indicators (such as performance indicators could be included.
3. Data upload and download should ideally be undertaken electronically, to ensure commonality (Data transfer by diskette, CD or other physical means should be discouraged for system security reasons.
4. Procedural guidelines should be minimal and introduced ahead of project launch.
5. The system should build, as far as possible, on existing organisational and resources.
6. Managerial requirements should be minimal and centralised to ensure system is easily kept current and uncompromised.
7. Links with pertinent international websites, and also with pertinent private sector or project-based websites in Kenya, whilst being a worthwhile medium-term aim, should be actively discouraged in the early stages of system implementation, to avoid mission creep.