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A tool for vaccine value chain appraisal

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- Common policy and technical constraints exist for foot-and-mouth disease (FMD) vaccination, especially in endemic settings.
- A vaccine value chain can be described by the stakeholders, processes and governance involved between a vaccine's manufacture and its ultimate administration to an animal.
- Analysis of this process will support effective control programmes any animal diseases where vaccination is applied.
- The following table has been developed through an iterative process and is proposed as an initial framework for countries as they develop FMD vaccination strategies.

Vaccine choice	• Vaccine choice is iteratively considered within the context of the vaccination programme's objectives • Post vaccination monitoring is in place, alongside vaccine matching and standards
Resourcing	• Resources are adequate, aligned to strategy and committed for an appropriate timeframe • Public and private support is available
Coordination and communication	• Strong formal and informal communication networks exist • National and international borders are considered
Effective implementation	• Cold chain facilities and biosecurity are assured and monitored • Clearly defined processes and logistics are required • Animal welfare must be protected at all times
Enabling environment	• Private-public relationships and partnerships are encouraged • There is synergy with animal health system strengthening initiatives
Monitoring vaccination	• Horizontal and vertical record keeping structures are implemented • There are robust and consistent prescription systems in place • Vaccine traceability is maintained throughout the value chain
Surveillance	• Surveillance systems are linked to disease control programmes • Passive surveillance is consistent and optimised • Surveillance accounts for the local context, e.g. seasonality
Farming systems	• Animal traceability systems are in place • Different farming systems are considered in vaccination programmes • Priorities are harmonised across livestock owners and government agendas
Capability	• Stakeholders throughout the system have relevant technical knowledge about vaccination and disease control
Opportunity	• Vaccination is accessible, affordable, acceptable, available • Assumptions and cultural norms are identified and where needed mitigated
Motivation	• The vaccination programme is built on trusted relationships • There is transparency about vaccine side effects and vaccine breakdown
Demand	• The interplay of supply and demand is understood • Willingness-to-pay in the private sector is recognised • Active mechanisms exist to match demand and manufacture
Inclusion and equity	• All activities consider equity across social groups and farming systems • Gendered barriers to participation in vaccination programme, including financial access, social barriers, socioeconomic status are actively addressed

Veterinary vaccine value chains are complex so this framework should be approached with systems thinking. The different factors identified here are not exclusive but interact with each other.