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‘The opportunities, drivers and barriers of establishing new value chains for post-mining economies’: Selected interim learnings from the hemp and cannabis sector development process.

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Content

Country context introduction – hemp and cannabis sector development

- 2019 Cabinet decision to develop sector as one of 14 priority sectors in the Masterplan approach. Presidential 2022 SONA stressed governments intention to 'mainstream' rural black farmers and communities. Decision based inter alia on;
  - the global hemp and cannabis sector is expanding incrementally with strong demand prospects to support domestic growth. Global sector growth projections vary from US$ 166bn to US$450 by 2025. African sector growth projections also vary significantly with estimates of sector growth at US$ 37bn by 2030 *(New Frontier Data 2022).*
  - An interim analysis of country competitive advantages (total factor cost; climate; soil; landrace and indigenous knowledge competitive advantages) and governments view that 130 000 jobs could be created in the sector.

- Government issued Cannabis licences (SAPHRA) and Hemp permits (DALRDD). Initial sector development regulatory steps contain high regulatory, cost and administrative 'start-up' barriers with a significantly constrained, export only demand pathway. This has enabled well resourced companies, utilizing private and 'angel' investor financing to invest in primary production and processed product exports - which meet stringent and costly Conformity Assessment hurdles.

- Initial research suggests that private sector dynamism has driven highly constrained export competitive primary and processed oil exports; IP and tacit knowledge development and some technology and innovation.

- Initial qualitative research suggests that the unintended consequence of the first sector development steps have excluded traditional 'legacy' growers (who have supplied African medicine and illicit domestic and export markets) despite government persecution, with significant benefits to impoverished rural communities. Newly 'licensed' companies dumped low-cost, high-quality, THC rich product on the illicit domestic market – further eroding demand and prices for rural farmers.

Selected constraining sector development factors

- **Policy**: the absence of policy certainty and coherence across a societal and government 'spectrum' of opinion - from 'full-on' prohibition to a regulated whole plant, all legitimate purposes regulation (including a regulated adult use market) in which religious; community, human rights, and economic issues are 'balanced'. Sector development in the absence of policy coherence is manifestly difficult.

- **Regulation**: the existence of a 'patchwork' of applicable, historical legislation – the Drugs, Medicines and Plant Improvement Acts and the absence of a single 'all legitimate purposes' legislation to regulate the market, including with respect to societal harms. (e.g. the Liquor Act.)

- **Functionality and Execution**: Constitutional functionality across multiple institutions – DOJCD; DOH; DALRRD; DTIC; SAPHRA; DOSD; DMRE, SABS, SANAS etc. Intra-governmental, inter institutional capacity and complexity is significant. 'Joined-up' programme implementation is a necessary condition for sector development.

- **International "Drugs' Regulation**: SA's obligations (and perceived obligations) to global drug conventions in circumstances where country comparators are 'pushing back' against outdated 'war on drugs' approaches.

- **Economic and industrial policy**: African countries, SA included, generally share a structural, resource extraction and commodity export dependence. Limited country developmental strategy; institutional capacity and investor driven extraction models, amongst others, embed dependence.

A theoretical perspective and key questions?

- Significant body of research and praxis which suggests that agricultural value chains represent an important opportunity for African countries – SA included. This includes the hemp and cannabis sector which shares value chain 'characteristics' with other high value agriculture sectors. (***'The industrialisation of agriculture'. Akubaye, Sender and Cramer and others.***)

- To what extent do agricultural sub-sectors in SA, hemp and cannabis included, present an opportunity to secure development across value added, technology intensive value chains, potentially with multiple economic benefits and spillover effects – labour intensity (in parts of the value chain); rural development and poverty alleviation; value added exports; technology transfer and diffusion and IP; tacit knowledge and skills development; investment, tax and other economic benefits.

- The following selected key questions arise:
  - What represents an all-factors and inclusive country competitive sub-sector strategy;
  - Where do country competitive advantages lie including with respect to climate mitigation factors;;
  - How are inhibiting factors addressed;
    - Policy and legislative coherence
    - What methodologies can be used to facilitate 'joined up' government - intra-governmental, inter-institutional implementation functionality?

Example: selected country competitive advantages.

- Indoor cultivation has a high carbon footprint. The carbon footprint of producing 1 kilogram (kg) of cannabis indoors ranges from 2,300 to 5,200 kg CO2, equivalent to burning 900 to 2,000 liters of fuel. The energy used for lighting and environmental controls for indoor cultivation operations can require up to 5,000 kilowatt-hours (kWh) of electricity per kg of dried flower. Indoor production of 400 metric tons per year in Germany is the equivalent of total household electricity use of a city the size of Cologne. *
- The notion that Standards can only be met by moving cultivation indoors is incorrect (and is likely being used as a non-tariff barrier (NTB)). Indoor production will make legal cannabis markets one of the most carbon-intensive agro-industry sectors. Research demonstrates that basic standards can be adequately met in outdoor cultivation, following Good Agricultural and Collecting Practice (GACP) Standards.
- Can outdoor cultivation be developed as an opportunity for inclusive sector development. Execution is dependent upon difficult challenges, inclusive of:
  - Developing an export compatible, supportive national (or African) Standards and Conformity Assessment framework;
  - Developing and implementing demand aggregation catalytic models for scale up;
  - Designing and implementing appropriate financing models, and
  - Developing supportive, applied technology, especially technology transfer on the demand side (processing and manufacture.
- Can an outdoor cultivation competitive advantage which 'overlaps' with other of SA's potential landrace and indigenous knowledge competitive advantages be secured? This is a significant challenge.

** (Source : Cannabis Policy Brief. Transnational Institute. October 2022 and Frontier Data.)*

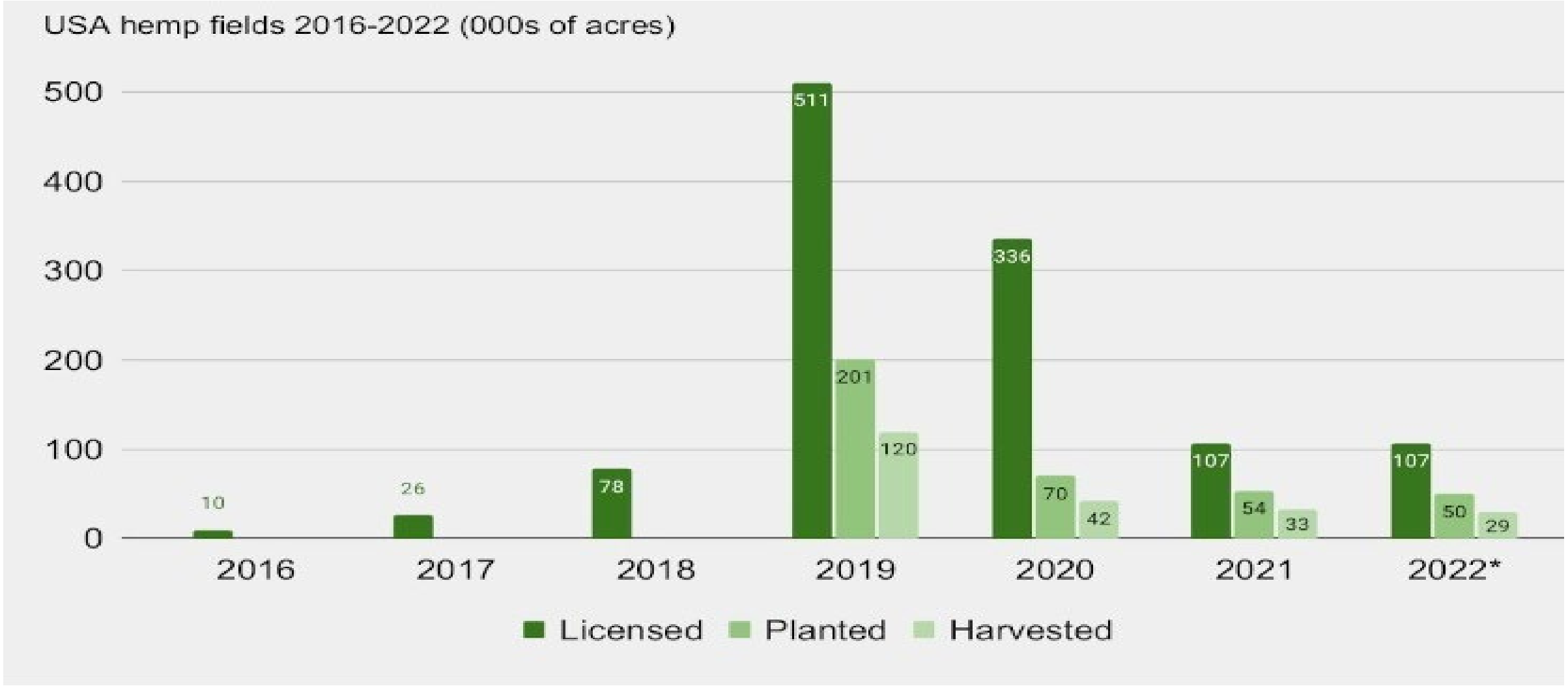
Building blocks: towards a sector development strategy

- A set of Interim Measures to enable supportive, efficient and more inclusive sector development.
- An evidence based situational, value chain analysis:
  - Upstream of the farm gate (seeds; agricultural capital goods; processing and manufacture equipment, fertilisers; organic chemicals etc.);
  - Downstream of the farm gate – a whole plant (flower, seeds, leaves and stalk) cultivation, processing and value-added manufacturing into multiple demand pathways: (prescription medicines; wellness/personal care/cosmetics; traditional medicines; biofuels and multiple industrial products – textiles; packaging; composites - and
  - Side stream (transport logistics; packaging and related services.)
- Supported by:
  - A set of foundational policy principles and all-purposes legislation,
  - Carefully designed financing instruments, (building on existing IDC finance model.)
  - A Standards and Conformity Assessment Framework
  - Deployment of a carefully designed, calibrated set of ‘interlocking’ industrial policy instruments (financing; strategic tariff deployment; regulation; standards; technology support etc.)
  - A sector integrated research and innovation effort (across multiple sites of research)
  - Innovative methodologies to embed intra-government, inter-institutional ‘joined-up’ execution.
  - Private sector partnerships with collaborative, complementary outcomes – e.g. mine rehabilitation/remediation.

Example: proposed methodology - inter-institutional implementation coherence.

Value Chain	Regulation/Standard	Institution
Cultivation	GAP/GACP/GMP/EUGMP/ Seed bank and custodian of RSA Genetics. Pests and Diseases, Agro – Extension.	DALRRD; SABS and SANAS. Testing SABS; others.
Processing	GMP/EUGMP/ SABS Mark Scheme. Processing and product standards.	SABS; DALRRD; SANAS; DOH and World Health Organisation; Vet Council
Extraction	GMP and PICS	SABS; SAHPRA; SANAS; DOH
Manufacturing- multiple food and industrial products. (Construction; Textiles; Composites etc,)	DOH Regulation. GMP; SABS Mark Scheme: HACCP; packaging and warning symbol regulations and sector specific standards (private standards) and conformity assessment (e.g. building materials; textiles; packaging etc,.)	DOH; SABS; SAHPRA; HASAP
Dispensing and Distribution.	SAPHRA Regulation; SAPS	SAHPRA; DOH; SABS
Metrology and Track and Trace	Track and Trace to support regulation; administration, transport, and exports.	NMISA, SARS Customs, NRCS
Geographical determination of grow areas.	Determining geographical grow nodes to prevent cross contamination of species.	DALRRD – others?

Market failures exist across markets: example - USA



*Estimated; SOURCES: New Frontier Data; USDA; Hemp Benchmarks; HempToday

Selected conclusions…

- New, ‘sunrise’ sector development is complex, requiring significant resources, intra-government policy, regulatory and implementation coherence.
- Supported by a robust evidence base to justify public sector expenditure and the deployment of ‘interlocking’ industrial policy instruments.
- A collaborative, conditional and complimentary relationship with the private sector, labour and community sectors to secure inclusive growth and minimize market failures and unintended negative outcomes where public sector ‘steer’ may be sub-optimal.
- ‘Quick fix’ sunrise sector development is unlikely.