

SESSION 3

Draft National SCP Action Plan including a Non-Financial Support Mechanism





To help the Government steer the economy onto a 'Green Economy' pathway

- ➢Aligning with and complementing the 'Concept for the Transition of the Republic of Kazakhstan to a Green Economy, 2050' and the
 - Green Economy Action Plan , 2021-2030'

Incorporating aspects of the European Union's 'Green Deal' policy



SCP Action Plan – Structure and Timescale



An extended introduction to SCP

Five thematic chapters - analysing the potential roles for SCP

➤Agricultural sector value chain

Energy sector value chain

- Including energy efficiency, GHG emissions and air quality
- Metals sector value chain
- ➤Water cross-sectoral
- ➢Solid waste management cross-sectoral

Suggestions for establishing a non-financial mechanism to promote SCP implementation

Action Plan for 2022-2030



Presentation Content



1. Sectoral Value Chains

>Analysis of each step in a value chain to identify key issues

- Resource consumption and
- Emissions, wastewater discharges, and solid wastes
- ➢ Potential SCP roles, tools and measures
- 2. Cross-Sector Themes

➢Potential roles of SCP

- 3. Enabling environment to facilitate SCP action
- 4. Non-financial, institutional mechanism to stimulate SCP adoption
- 5. Proposed Action Plan and implementation responsibilities



Agriculture Value Chain





Resolving the Value Chain into Stages

Multiple stages e.g.

- ➤Crop cultivation & harvesting
- ➤Animal rearing
 - Slaughter for meat
 - Harvesting for eggs, milk, wool
- Storage and distribution
- ➤Food processing
- ≻ Retail
- ➤Consumption

Several steps in each stage

Each may involve

- Resource consumption energy, water, chemicals, intermediate products, other materials
- Emissions to air, wastewater & solid waste







Crop Cultivation & Harvesting

Resource consumption issues

- Freshwater agriculture as a whole accounting for 80% of national demand
 - Water efficient irrigation good practice
 - Plant selection innovation
 - Outreach activity promote good practice
 - Pricing & financial incentives 'push & pull'

≻Inorganic fertilisers (N & P)

- Efficient use timing & quantity
- Substitute with organic options where possible
- Outreach activity promote good practice

Chemicals – pesticides & herbicides

- Substitute with natural substances good practice
- Outreach activity promote good practice

Emissions, discharges, waste

- Impacts of water abstraction on water basins and ecosystems
- Emissions to air inorganic fertilisers
 - Energy-intensive production indirect GHGs
 - Ammonia & nitrous oxide from applied Nfertilisers – air pollution & GHGs
- Potential water pollution from leaching of applied fertiliser N & P
- ➤ Water/soil pollution from chemical use
- Chemicals carried over into crops
 - Potential health impacts?
- Crop wastage food waste
 - Outreach activity promote good practice
- ➢ Post-harvest crop residues



Animal Rearing



Resource consumption issues

- ➢ Feed − crops, protein, additives
 - Good practice feeding regime
 - Outreach activity promote good practice
 - Pricing & financial incentives 'push & pull'
- ➤ Energy animal housing
 - Substitute with sources where possible
 - Outreach activity promote good practice

Emissions, discharges, waste

- ➤ Manure faeces, urine, bedding
 - UNECE Framework for Good Agriculture Practice – manure management
 - Heated anaerobic digestion or composting of manures – recycling treated manure on to arable or pasture land
 - Outreach activity promote good practice
- \succ Emissions to air
 - GHG methane from manure
 - GHG carbon dioxide indirect from energy inputs to feed
 - Ammonia
- ➤Wastewater
 - Outreach activity promote good practice



Food & Beverage Processing

Resource consumption issues

- Primary foodstuffs cereals, vegetables, fruit, meat, milk etc
- Energy processing, chilling, freezing etc
- ➤Water process and cooling
- Packaging materials glass, plastic, metals, cardboard, composites
- Chemicals food additives, process, cleaning

Emissions, discharges, waste

- ➢ Food waste
- ➢ Packaging waste
- Emissions to air
- > Wastewater
- ➤Cooling water

SCP Opportunities

- Huge scope for using SCP Tools to help increase resource efficiency and reduce food waste at source
- Using unavoidable food waste as a resource (substitution & circularity) e.g.
 - Whey from cheese production
 - Anaerobic Digestion biogas
 - Animal foodstuffs
- Packaging design and recycling
- Outreach activity promote good practice





Food Retailing



Resource consumption issues

➢ Foodstuffs and beverages

➢ Packaging

Energy – space heating, chilling, freezing

Emissions, discharges, waste

- ➢ Food waste
- Packaging waste
- ➤Emissions to air

SCP Opportunities

- Using SCP Tools to help increase resource efficiency and reduce food waste
- Segregation of unavoidable food waste for treatment – anaerobic digestion, composting – and resource recovery
- Lead / participate in packaging redesign to minimise waste e.g.
 - 'Plastic' bags made from potato starch
- ➤ Labelling policies
- Segregation of packaging waste from other waste – for recycling
- >Outreach activity promote good practice



Food Consumption



Consumers

- ➤ Households
- Hospitality sector hotels, restaurants etc
- Institutions hospitals, offices, prisons etc

Resource consumption

- Foodstuffs and beverages
- ➢ Packaging
- ≻Energy cooking, chilling, freezing

Emissions, discharges, waste

- ➢ Food waste
- ➢ Packaging waste
- ➤Emissions to air

SCP Opportunities

- Outreach activity targeting the main consumer groups - promoting behavioural change and good practice
 - To minimise food waste
 - To segregate food & packaging wastes from other wastes – enabling effective
 - Food waste treatment and recycling
 - Packaging recycling
- Consumer choice to influence food supply
- Large-scale institutions to use SCP tools as aids to improve resource efficiency
- Potential use of treated wastewater sludge as a 'natural' source of fertiliser for crops – circularity principle



Agriculture VC – Key Issues for SCP Action



- Freshwater consumption crops Herbicides and pesticides consumption – crops Inorganic fertiliser use – NH₃ and GHG emissions Animal manure management – NH₃ and GHG emissions Resource efficiency at all stages of food & drink production and retailing – energy, packaging, other materials
- Food waste at all stages food security & GHG emissions
 - Primary production to consumption
 - Treatment and disposal of the wastes arising



Agriculture & Food – Scope for SCP Action



Adopt good practice where possible

- ➢Applies to all issues mentioned
- Communication targeted at specific segments of the value chain

Innovation to meet climate change threats

≻Crop selection

Resource efficiency in production

- ➤Use relevant SCP tools
 - Benchmarking, Audits, Fishbone analysis, SCP Champions etc
 - Identify and implement measures to reduce resource use – including recycling
 - Targeted training

➢Apply BAT measures

➢Use cleaner design to minimise packaging

Substitution for harmful resources

- Manures, Composted food and other organic wastes, treated Sewage Sludge
- Natural herbicides / pesticides
- Biofuels & other renewable energy

Producer responsibility obligations

- Processing & Retail enterprises
 - Recycle of packaging materials

Resource recovery from food wastes

- At-source waste separation and collection
- ➤Use of treated collected wastes
 - Anaerobic digestion biogas and treated solids
 - Composting composted solids
 - Animal foodstuffs
- Targeted communication on good practice



Energy Value Chain (VC)





Energy – Key Issues

Climate Change and Air Quality

GHG and air pollutant emissions

- Diffuse & point-source
- Production and Consumption
 - Natural gas extraction, processing & distribution
 - Coal mining
 - Energy transformation & distribution
 - Other fuel combustion transport, buildings, heating, etc

Energy efficiency Energy decarbonisation

Growth in Annual GHG Emissions since 2008

(million tonne CO₂-eq)

Energy – Scope for SCP Action

Apply BAT where possible

- Coal, natural gas & oil exploration, production, refining, and management of wastes
- \succ Thermal power generation plants \geq 50MWth
- Manufacture of ammonia, acids & fertilisers

Energy efficiency (EE)

- Implement a road map of EE measures to achieve key strategic goals for 2030
- Communication on good-best practice
 - Targeted messaging to industry, households, retail, offices, institutions, transport
- Targeted training on using SCP tools
- Building insulation
- Minimum standards for appliances placed in the market (Eco-Design & EURO standards)
- Eco-labelling of products consumer choice

Energy decarbonisation

- Renewable energy sources hydro, wind, solar, bio-fuels (gas, liquid, solid)
 - Strategy, regulate, plan, investment incentives, communicate & adopt good practice

Carbon capture and storage

- 'Blue and Green Hydrogen'
 - Develop & implement a Road Map based on the World Bank study
- ➢ Nuclear

Emissions Inventories & Projections

- ➢ GHGs and air pollutants
- Prepare inventory every year
 - Capacity strengthening?
- Prepare projections every 2 years
 - Key tool for policy shaping and assessment
 - Capacity development

Emission Projections Example - NOx

(1) Existing Measures (WM)

Metals Value Chain (VC)

Metals VC

Ore mining

Solid wastesAcid mine drainage

Ore and metallurgical processing

- Energy consumption
- Emissions to air and water
- ➢Solid wastes

SCP Actions

- ≻Implement BAT
 - Contingent on the work of the International Green Technologies & Investment Projects Centre
- Apply SCP Tools now to improve resource efficiency

Water – Key Issues for SCP

Water efficient agriculture – food security, river basin sustainability

Water efficiency in all processing and manufacturing industries

- Energy and food processing sectors
- ≻All other sectors

Water efficiency in buildings

- ➢ Residential
- ➢Institutional settings
- ➢Offices
- Hospitality settings

Scope for SCP Action – Water Demand in Production & Buildings

Use relevant SCP tools to reduce water consumption in production & buildings

- Benchmarking, Audits, Fishbone analysis, SCP Champions etc
- Identify and implement measures to reduce water use – including recycling
- Targeted training on using SCP tools
- Communication on good-best practice
 - Targeted messaging to industry, retail, offices, institutions
 - Appliances
 - Behaviour

Apply BAT measures wherever possible

- BAT Reference Documents & Conclusions exist for many production sectors
 - Water efficiency measures are included

Residential, Institutional

- Communicate good practice guidance and case study examples
 - Appliances
 - Behaviour
- Public buildings to adopt good practice
 - Appliances
 - Behaviour

Resource Recovery from Municipal Solid Waste (MSW) – Key Issues for SCP

Ambition to develop a modern MSW management system

- ➤Waste recovery and recycling is practised
- >MSW sorting plants have operated a number of years
- ➢ But much waste is still dumped on land
- An enabling environment to drive resource recovery from both MSW & defined end-of-life products is needed and will require strengthening

Aim to collect segregated waste streams – critical to recyclate quality & price

- ➢ Recyclable Dry Paper, cardboard, plastics, textiles, metal, glass
- ➢ Recyclable Biowastes food, 'green' waste, other
- > Recyclable products e.g. electrical & electronic appliances, batteries, refrigerators, vehicles
- ➢Non-recyclable household waste − to polygons
- >Non-recyclable clinical / medical waste to special facility

Strengthening the markets for resource recovery from waste

Resource Recovery – Scope for SCP Action

Segregating household waste

- ➢ Recyclables dry
- Biowastes
- ➢ Non-recyclables

Local facilities for receiving recyclable wastes

- Electrical & electronic appliances etc
- Solvent-based products & oils
- Construction materials etc

Supportive policies & action

- Place MSW collection & disposal to polygons on a sustainable basis - infrastructure, pricing / taxes, compliance
- Costed national strategy & plan for resource recovery
- Extended producer / supplier responsibility

Biowaste processing

- Anaerobic digestion biogas
- ➤ Composting
- Beneficial use of digestate (digested solids) and compost
 - Quality control and standards
 - Good practice guidance
 - Dissemination

Effective communication with stakeholders

- ➤ Households
- Commercial sector retail, hospitality, offices
- ➤ Institutions
- > Industry

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SCP Action Requires an 'Enabling Environment'

An environment in which potential barriers are minimised / removed

>Enabling the desired outcomes to be achieved

Six core elements can be identified

- Each is elaborated in Chapter 5 on Resource Recovery from **Municipal Solid Waste**
- ➤Their relative significance may vary depending on sectoral characteristics

'Hard-Edged' Policy Developments to Consider

Pricing of consumed resources

> Energy, water, materials, landfill volume, etc

BAT as a regulatory principle

Textiles, Energy, Chemicals, Metallurgical production etc

National emission inventories, projections & reduction commitments

➢ GHGs & Air Pollutants

Ratify CLRTAP & Gothenburg protocol

Decarbonising the energy system

Renewable energy sources

Carbon capture & storage (CCS)

≻ Hydrogen

Limits on annual volumes of freshwater abstraction

Specific to water-stressed river basins

Extended Producer Responsibility

- Applied to producers / suppliers of manufactured products
 - Electrical & electronic goods, motor vehicles, refrigerators etc
- ➢ Facilities to receive & dismantle end-of-life goods
 - Enabling resource recovery & return to market

Green Products in the marketplace

- Mandatory minimum product performance standards
 - Energy efficiency, water use, etc
- Eco-labelling giving consumers a choice
- Green purchasing codes

Financing of solid waste management

Consistent with resource recovery

'Soft' Policy Measures to Consider

Introduce SCP principles into educational curricula and teaching practice

➤Schools

➤Universities

Establish an SCP Support/Promotion Mechanism

- Targeted activity to <u>stimulate behavioural</u> <u>change</u>
- Providing access to good practice guidance, SCP tools, benchmarking data, case studies etc
- Promote partnerships working for change across a value chain

A Model of Behavioural Change

Reinforce change Reminder communication

Potential Role of an SCP Support Mechanism

Assist the provision of SCP-related policy advice to Government

An institutional focus to promote action by all stakeholders

➤Consumers

➢Producers

Targeted activity to stimulate behavioural change

- ➢ Raise awareness
- Disseminate good practice guidance, SCP tools, benchmarking data, measures, case studies etc

➤Training

Promote partnerships working for change across a value chain

Potential SCP Support Mechanisms (1)

Model based on Green Hub (Uzbekistan)

Being established by IFMR

 Research organisation under the Ministry of Economic Development and Poverty Reduction

Mission

- Analyse the current situation
- Develop pathways to sustainable economic development based on 'green economy'
- Unite experts, research organisations, IFIs and enterprises

≻Goals

- Network of specialists
- Modern forecasting & analytical tools
- Raising awareness
- Access to database and knowledge

Potential SCP Support Mechanisms (2)

Model based on UK's 'WRAP'

(Waste & Resources Action Programme)

Established in 2000 – drawing on experience of two Best Practice Programmes

- Energy efficiency & Waste
- ▶ Registered charity since 2014 core funding by UK Governments & EU
- > Works with businesses, individuals and communities for a circular economy
- ➤Target sectors include
 - Food and Drink, Textiles, Resource recovery, Plastics, Packaging
 - Services include Citizen Behaviour Change & Sector Voluntary Agreements
- ➢ Resources include
 - Reports, Case Studies, Guides, Tools, Campaign assets

SCP Action Plan – Chapters & Timescale

- Chap. 1 An extended introduction to SCP
- Chap. 2 Rationale for the scope
- Chap. 3-7 Five themes analysing the potential roles for SCP

➢Agriculture sector value chain

➢Energy sector value chain

Including energy efficiency, GHG emissions and air quality

Metals sector value chain

➤Water - cross-sectoral

Solid waste management – cross-sectoral

- Chap. 8 A non-financial mechanism to promote SCP implementation
- Chap. 9 Draft Action Plan for 2022-2030

Schematic of Proposed SCP Action Plan

Policy Recommendations

Integrate SCP approach into a revised Green Economy Concept (0.2)

Establish and maintain a national SCP Support Mechanism / Unit to promote and advance SCP implementation – addressing 5 main themes (0.3 – 0.8)

Adapt curricula and teaching materials for use in primary, secondary and tertiary education - incorporating appropriate elements of SCP (0.11)

Policy analysis and design – suggested areas to consider (0.9)

Amend legislation as appropriate (0.10)

Suggested Areas for Policy Analysis (0.9) switchasia

Pricing of resource use & financial instruments (incentives / taxes)

Water, Energy, Solid Waste Management services

Extended Producer Responsibility (EPR) obligation & associated infrastructure

- Solid Waste Management
- Green product procurement
 - Purchasing Codes, Product Labelling, Minimum Product Standards (Eco-Design)

Long-term transition to a carbon-neutral future

Energy, Transport

Other areas

- Limits on annual freshwater abstraction volumes
- Regular national emission inventories and projections

SCP Support Mechanism

To promote the SCP approach in the main thematic areas

- Raise awareness
- Provide information and guidance to practitioners and households, including
 - SCP tools and their use
 - Good practice and Case studies illustrating tool application and measures
 - Training
- Drive behavioural change motivating practitioners and households
- Provide appropriate policy support & advice to Government

Decide on an appropriate support mechanism and establish it

- Host institution?
- Terms of Reference
- Financing
- Period of operation
- Reporting
- Capacity building

Thematic Action Programmes

Could be expanded in future

Formal comments from the Government on the proposed draft SCP Action Plan to be sent to SWITCH-ASIA (Zulfira Zikrina) by Wednesday 6 July 2022

Revision of the Action Plan to reflect the Government's comments

General Discussion and Comment

- 1. Do you agree with the recommendation to integrate the SCP approach into a revised Green Economy Concept?
- 2. A) Do you agree with the recommendation to establish an institutional mechanism to promote SCP and its adoption in Kazakhstan?B) How and in what institution might this mechanism be established?
- 3. Will it be possible to incorporate elements of the SCP approach into the curricula and teaching materials for 1^o, 2^o and 3^o education?
- 4. Do you think the suggested areas for policy development to support SCP are reasonable?

