Views on solid waste management by related agencies of the island of Rhodes, Greece

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Present situation

• Modern societies are facing significant environmental problems with a tendency for deterioration due to the way of thinking of humanity in order to meet material needs.
• Development and the adoption of sustainability must be based on economic efficiency, environmental balance and social justice.
• These attitudes have contributed to the waste increase due to the continuous demand and production.
Disposal of waste in Greece

- Laws on management of MSW seem to have little application in Greece.
- Out of the 5.2 million tons of household waste produced each year, 74% are deposited in landfills and only 26% are disposed of in alternative ways.
Environmental - economic - social implications

- The environmental burden is very high due to the lack of protection measures.
- The environmental degradation of an area adjacent to the UWDSs has also economic consequences.
- Social implications include the “Not In My Back Yard” phenomenon.
Waste management

- Sanitary landfill, an integral part of overall waste management.
- The main pillar -> reuse, recycling and recovery of materials and energy.
- Sorting at the source or combination with mixed waste.
- Basic factors: planning, necessary works, safe final disposal of the residues, equipment, biogas control and management.
Methodology

- Sample of 24 representatives of all local organisations directly or indirectly involved in the management of solid waste in the Rhodes area.
- Qualitative research.
- Structured interview.
- Five modules and 40 questions.
- June - September 2015.
Issues related to UWDSs

• Existence of the non-restored UWDSs...
  - 76.92% blame the Authorities inertia and obstruction,
  - 7.69% to the technical - financial difficulties
  - 15.38% declare that the restoration process is in progress.
• 83.33% they are aware of the continued illegal disposal.
• Suggestions:
  - 38.46% -> policing (imposing fines),
  - 15.38% and 23.08% -> educating and informing citizens,
  - 23.08% -> implementing an integrated waste management solution.
Views on the Sanitary Landfill Site

- 83.33% of respondents have visited the existing SLS
- only 30% are pleased with the current situation
- 33.33% propose the implementation of maintenance projects
- 66.67% propose the operation of the new cell and of the Material Recovery Facility
... on the collection of biogas

- collection is being carried out,
- collection is not being carried out
- do not know whether any action has been taken.

“collection is not being carried out”:
- 75%, this is due to the technical deficiencies and failures that occurred,
- 25%, the low efficiency of municipal services.
... on composting

• 91.67% -> Household and municipal composting programmes should have been implemented.

• In order to implement these programmes:
  - 41.18% -> citizens must be educated and a consciousness must be acquired
  - 35.29% -> citizens must be informed
  - 23.53% -> necessary equipment distributed.
• 91.67% -> Household and municipal composting programmes should have been implemented.

• In order to implement these programmes:
  - 41.18% -> citizens must be educated and a consciousness must be acquired
  - 35.29% -> citizens must be informed
  - 23.53% -> necessary equipment distributed.
• Separate collection of at least 4 material streams (paper, plastic, glass, metals):
  - 100% negative answer
• “Sorting at source" programme:
  - 91.67% agreed
  - 8.33% need to be accompanied by an organized recycling program.
• Satisfaction with the course of recycling on Rhodes: 91.67% negative
• the following steps are needed:
  - 31.58% information and awareness of citizens
  - 10.53% educating citizens
  - 31.58% infrastructure and systems of alternative management
  - 15.79% alternative management actions
  - 10.53% implementation of the legislation.
• Delay in construction works of the Material Recovery Facility:
  - 16.67% are not aware
  - 83.33% claim to be aware

• Reasons for the delay:
  - 50% the obstructiveness of the municipal authority
  - 16.76% responsibility of the central government
  - 33.33% time consuming procedures for public works projects under the existing legislation.
... on integrated solid waste management

• The best way of MSW integrated management for Rhodes:
  83.33% believe the management should include:
  - sorting of MSW at the source
  - thereafter transport to the Material Recovery Facility for a further sorting
  - recovery of materials through recycling
  - composting of the organics
  - disposal of the residue in RSWL.
... on the achievement of the quantitative targets

- Quantitative targets for the reduction of biodegradable MSW by 2020:
  - 75% these targets will not be achieved
  - 16.67% they will be achieved
  - 8.33% do not know.

- 50% of positive answers:
  - sorting at the source, recycling and recovering energy with bioreactors and gasification or total-mass combustion.

- The other 50%:
  - implementation of the Regional Waste Management Plan and activation of the Solid Waste Management Body.
Conclusions (1/2)

- There is a laxity from the part of the State in implementing national legislation, screening at the source, composting, recycling and diversion from landfill.
- Problem with the over complex legislative framework that delays the implementation of public works and private investments.
- The suggestion to provide financial incentives to citizens, and the collaboration of the Local Government with the private sector may bring a change.
Conclusions (2/2)

• The need for a comprehensive MSW management plan with the involvement of the private sector, in full collaboration with the Solid Waste Management Body, is highlighted.

• Promote solutions towards a sustainable management under the supervision of authorities, the effective implementation the legislation and active participation of citizens.

• Information, education and awareness of people with the contribution of Environmental Education could act as a trigger for collective actions.
Thank you!