DEWATS for Slaughterhouses and Markets

Effective and sustainable wastewater treatment and reuse for a variety of slaughterhouses and markets
Pollution due to Slaughterhouse’s and Market’s Operation is a Barrier to Safe and Economical Production

Effects of Slaughterhouse’s and Market’s Operation

Slaughterhouses and markets are one of the income generators of the country. In spite of their contributions in the economic growth of the country, they also contribute in the problems faced by the country. Due to the unsafe discharge of slaughterhouses’ and markets’ waste, clean water supplies are polluted, productive potential is exhausted, and health risks in the region are gravely increased.

- In developing countries, 70 percent of industrial wastes are dumped untreated into waters, polluting the usable water supply.
- Improved sanitation reduces diarrhoeal morbidity by 37.5%
- Up to 58 percent of groundwater sampled is contaminated with coliform and needs treatment.
- Approximately 31 percent of illness monitored for a five-year period were caused by water-borne sources

Slaughterhouses and Markets as Small and Medium Enterprises (SMEs)

More than 99 percent businesses operating in the Philippines belong to Small and Medium Enterprises (SMEs).
- SMEs contributed almost 70 percent of the total jobs generated by all types of business establishments in the country.
- SMEs contribute 30 percent of the total value added.

Regardless of the wide operation of SMEs, they often discharge untreated wastewater into the environment more than other enterprises because of inadequate sanitation facilities.

Gaps in Centralized Sewage

Many slaughterhouses and markets cannot pay high investment and maintenance costs required for centralized wastewater treatment systems.
- Central sewage projects create significant gaps in peripheral areas and do not allow for new or expanding industries.
- Afflicted workers and communities often create inadequate substitutes that discharge wastewater without meeting environmental standards.

Below: Meeting sanitation goals can greatly improve economic benefits. DEWATS installed with landscaped at the public park. Dumaguete Public Market

BNS-Philis Mission

With a mission to improve the livelihoods of disadvantaged groups within societies and to sustain the functioning of eco-systems through dissemination of demand oriented Basic Needs Services (BNS), Basic Needs Services Philippines Incorporated (BNS-Philis), its Partner Networks together with Bremen Overseas Research and Development Association (BORDA), develop and disseminate innovative solutions for facilitating the access to BNS.

DEWATS Service Packages

One Basic Needs Service is DEWATS, an effective, efficient, affordable and proven wastewater treatment solution for (sub-) tropical regions and low-income countries. DEWATS stands for "Decentralized Wastewater Treatment Solutions", but it is much more than just a technical approach. DEWATS Service Packages include not simply the construction of hardware but a whole set of integrated measures which are combined according to demand. DEWATS for Slaughterhouses and Markets are one of these Service Packages that aims to improve wastewater treatment and reuse for slaughterhouses and markets.

Waste dumped from an SME pollutes surroundings, contaminates drinking water, and causes complaints from neighbourhood.

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DEWATS for Slaughterhouse and Markets

As with other DEWATS solutions, DEWATS for Slaughterhouse and Markets is designed with innovative technology that can be built by local craftsmen and engineers using locally available resources. DEWATS for slaughterhouses and markets is an affordable solution designed for small to medium enterprises to ensure the existence and sustainability of clean water supplies, safe health conditions, and economic viability.

Key features of DEWATS for Slaughterhouses and Markets

DEWATS for Slaughterhouses and Markets is an efficient and effective treatment solution for slaughterhouse and market wastewater that utilises sustainable and adaptable technology. Its key features are:

- Efficient design that treats high load capacities of organic industrial and residential wastewater
- Innovative technology and adaptable construction that can process extreme fluctuations in wastewater composition
- Allows on-site waste to be disposed of properly and on-time without chemicals or energy inputs
- An open system and demand responsive approach allows local farmers and industries to self-manage the sanitation facilities

- DEWATS for Slaughterhouses and Markets fills gaps in areas centralized sewage systems cannot reach
- Modular design of all components creates low primary investment costs since no imports are required
- Reliable and long-lasting construction design eliminates expensive and sophisticated maintenance
- Multi-stakeholder approach allows for adaptable design based on geographic location, load capacity and community/industry involvement
- Wastewater meets environmental standards
- Wastewater can be reused for irrigation, while ensuring sustainable supplies and continued production

Resulting Benefits

These measures, which are coordinated by BORDA’s regional offices and implemented with local BORDA BNS Partner Organizations, provide a range of benefits:

- Provides an expandable waste treatment solution to decentralized agro-industry enterprises
- Allows subsistence farmers and agro-industries to continue their practices without unnecessary environmental degradation or increased health risks
- Advances conditions for clean water supplies, improved sanitation and the reliability of agro-industry production
DEWATS for Slaughterhouse and Markets - a proven solution

Additional benefits
- Biogas occurs naturally during the treatment process and can be used for lighting and cooking, creating an estimated 5 to 20% reduction in energy expenses
- Compost is a natural and highly beneficial fertilizer resulting from the treatment process, which can be directly distributed to farms
- Efficient treatment of daily wastewater flows up to 500m³/day

Operation & Maintenance training
The benefits of DEWATS for Slaughterhouse and Markets are assured through a simple but permanent operational process. That is why the DEWATS Service Package integrates special operation and maintenance training for all DEWATS for Slaughterhouse and Markets facilities. It enables community members or workers to maintain the facility independently and self-sufficiently.

Different Designs for Different Applications
DEWATS approach is a flexible and adaptable solution ready for many different applications.
List of some slaughterhouses and markets already using DEWATS:
- VR Abattoir – Antipolo City
- Bauang Public Market and Slaughterhouse- Bauang La Union
- Naguillian Slaughterhouse- Naguillian, La Union
- APDC- BAI – Valenzuela City
- Dumagute Public Market-Dumagute City
- Sta. Cruz Slaughterhouse- Sta. Cruz Laguna
- Iloilo Slaughterhouse- Iloilo City
- General Santos Public Market-General Santos City

A proven solution
For over 8 years BNS-Phils has led the way in innovative wastewater treatment facilities. Today, BNS-Phils has already achieved the sustainable operation of more than 11 DEWATS solutions for slaughterhouses and markets all over the country. This demonstrates that DEWATS for Slaughterhouse and Markets is a proven and affordable solution to combat wastewater problems for slaughterhouses and markets. Total costs are based on load capacity, discharge requirement and geography. All infrastructures will be based on locally available materials and labour.

DEWATS Service Packages
- School Based Sanitation
- Community Based Sanitation
- Emergency Sanitation
- Sanitation for Hospitals & Hotels
- Wastewater Treatment for Agro-Industry
- Sanitation for Prisons
- Sanitation for Real Estates
- Sanitation Mapping
- Municipal Sludge Treatment Plant
- Health Impact Assessment & Hygiene Education
- Capacity Development
- Standardisation
- Research & Development

DEWATS – Decentralized Wastewater Treatment Solutions
Developed & disseminated by BORDA and over 20 BORDA BNS Network Partners in South and South East Asia & Southern Africa

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