

"ASIARESIST"

Hazard analysis of antimicrobial resistance associated with Asian aquacultural environments.

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Framework 5: INCO-Dev programme

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Background (1)

- ❖ Inappropriate use of antibiotics in aquaculture can lead to ...
 - Antibiotic residues in the food chain.
 - Antibiotic resistance in the farm environment, farmed species, food chain and consumers.
- ❖ Concerns in the EU about antibiotics, and chloramphenicol in particular, in Asian aquaculture products.
- ❖ A paucity of knowledge concerning antibiotic resistance in Southeast Asian (SEA) aquaculture.
- ❖ A need for new tools and methods to study the problem and assist in its control.

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Background (2)

- ❖ A wish in the EU to work in partnership with SEA countries to research and control problems surrounding antibiotic use in aquaculture.
- ❖ A long-standing relationship in aquaculture research between the University of Stirling and scientists and aquaculturists in SEA.
- ❖ Contacts between microbiologists in the Universities of Stirling and Ghent.
- ❖ The EU INCO-dev programme.

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Aims

- ⊗ Assessment of the extent of antibiotic resistance in aquaculture in Southeast Asia
- ⊗ Assessment of the potential for transfer of antibiotic resistance from the aquaculture environment to the broad public environment
- ⊗ Identification of critical control points where monitoring systems could be applied to prevent or eliminate antibiotic resistance

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Specific objectives (1)

- to formulate a set of standard operating procedures (SOPs)
- to establish a collection of chloramphenicol-resistant heterotrophic bacteria from SEA aquaculture sites.
- to provide descriptive and taxonomic data for antibiotic-resistant bacterial isolates.
- to provide quantitative data on the antimicrobial susceptibility of bacterial isolates.
- to produce plasmid profiles for antibiotic-resistant bacterial isolates.

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Specific objectives (2)

- to describe the distribution of resistance genes among a sub-set of isolates.
- to assess the transferability of resistance between aquatic and human bacterial isolates.
- to establish a global database to collect and analyse data.
- to produce guidelines for monitoring transferable antimicrobial resistance.
- to disseminate project outputs.

Work Package No.	Work package title	Lead contractor
WP 1	Evaluation, harmonisation and standardisation of sampling methodology	Stirling University
WP 2	Sample collection, bacterial isolation and preservation	Can Tho University
WP 3	Taxonomic characterisation of strain collection	Ghent University
WP 4	Antimicrobial susceptibility testing	AAHRI
WP 5	Genotyping of isolates	Stirling University
WP 6	Resistance gene detection and horizontal transfer	UPM
WP 7	Data handling and dissemination of project outputs	RILAB

