# Data Ents Team

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Preprocessing

- the input datasets had imbalanced classes with ratio of approx. 1:3:9 between sizes, so additional image arrays were added through transformation of existing ones (data augmentation)

- to make the features of images more distinctive, a range of transformations were applied, inc. kernel-based edge enhancement, random rotations, flipping and cropping changes
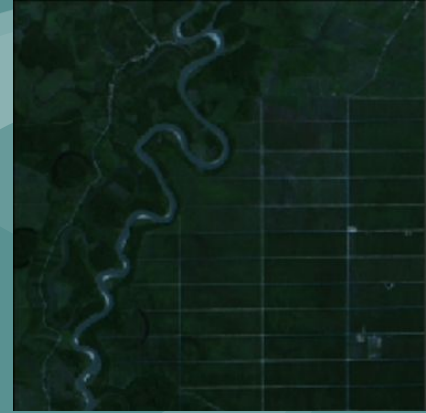
Before sharpening

After sharpening

Model

- used **Xception** model with pre-trained layers (freezing lower layers) on enhanced image tensors

- trained in batches with Adam optimization and SparseCategoricalCrossentropy as loss function with early stopping condition based on accuracy of validation set

Evaluation

- achieved accuracy score of 0.78 for training set and 0.72 for validation set

- compared multiple models: transfer learning, classical CNNs