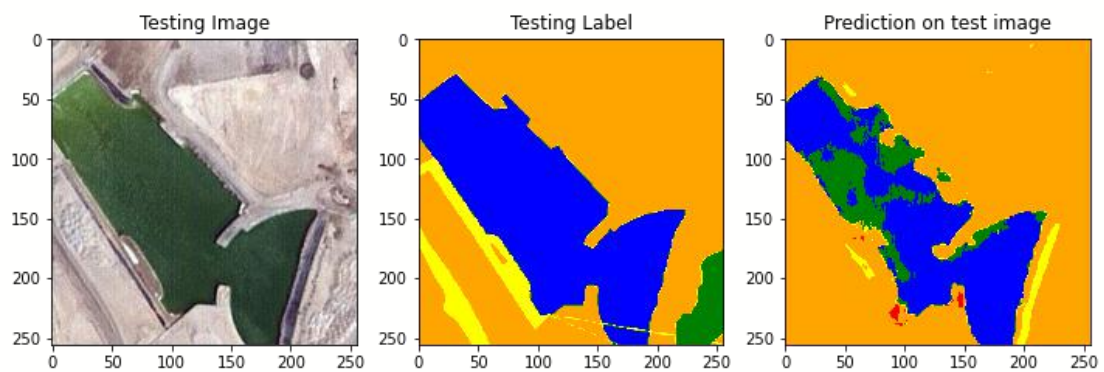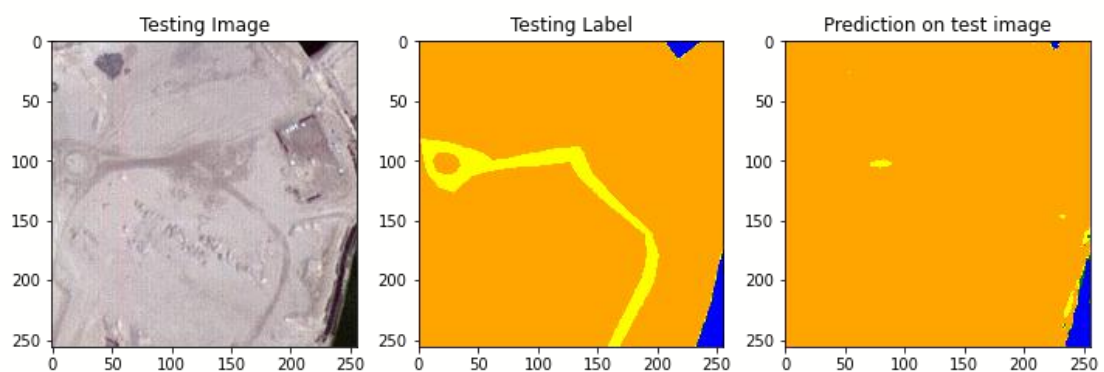Compare loss:

CategoricalCELoss

Epoch 60/60
loss: 0.0598 - accuracy: 0.8753 - jacard_coef: 0.6940 - val_loss: 0.0666 - val_accuracy:
0.8674 - val_jacard_coef: 0.6896

Building : 0   'red'
Land : 1   'orange'
Road : 2   'yellow'
Vegetation : 3   'green'
Water : 4   'blue'
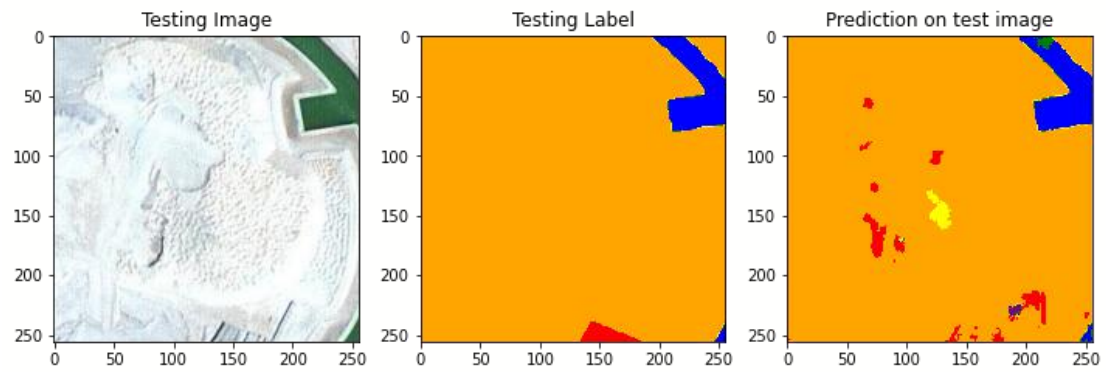# Unlabeled : 5   'purple'

test_img_number = 0

test_inumber = 2
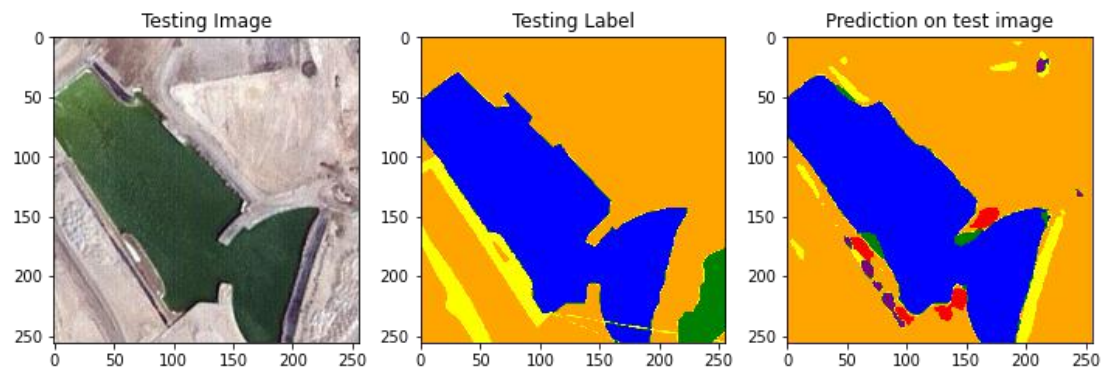

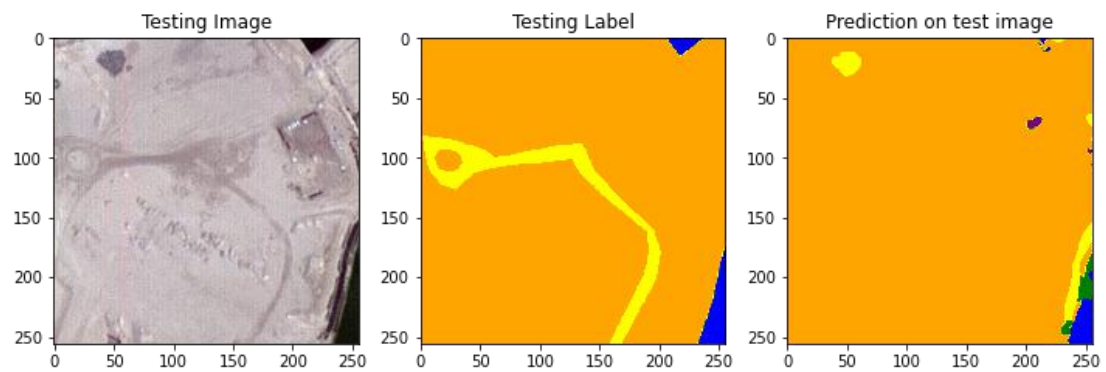# test_img_number = 20

dice_loss

60 epoch
Epoch 60/60
loss: 0.3092 - accuracy: 0.8493 - jacard_coef: 0.7394 - val_loss: 0.3739 - val_accuracy: 0.8585 - val_jacard_coef: 0.7543

test_img_number = 0

test_img_number = 2
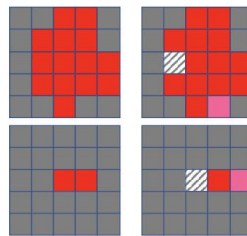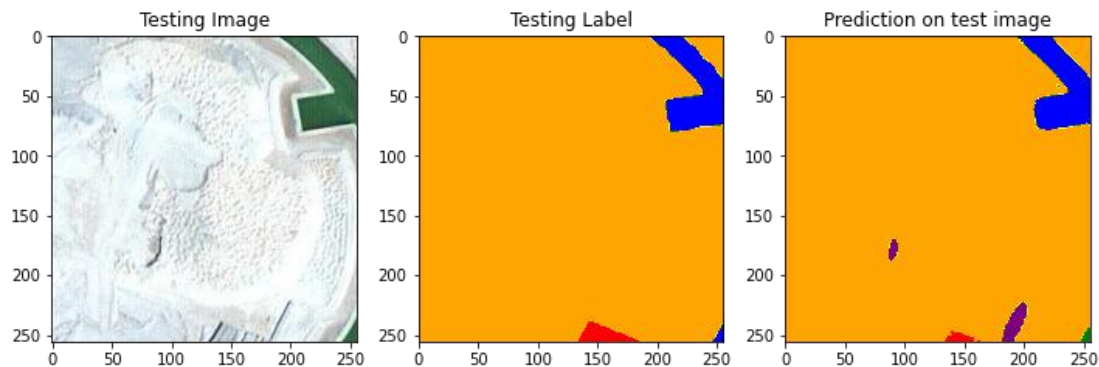
test_img_number = 20

Fig. 13: Comparison of cross entropy and Dice losses for segmenting small and large objects. The red pixels show the ground truth and the predicted foregrounds in the left and right columns respectively. The striped and the pink pixels indicate false negative and false positive, respectively. For the top row (i.e., large foreground), the Dice loss returns 0.96 for one false negative and for the bottom row (i.e., small object) returns 0.66 for one false negative, whereas the cross entropy loss function outputs 0.83 for both the cases. By considering a false negative and false positive, the output value drops even more in case of using Dice but the cross entropy stays smooth (i.e., Dice value of 0.93 and 0.50 for large and small object versus cross entropy loss value of 1.66 for both.)

Unified Focal loss: Generalising Dice and cross entropy-based losses to handle class imbalanced medical image segmentation
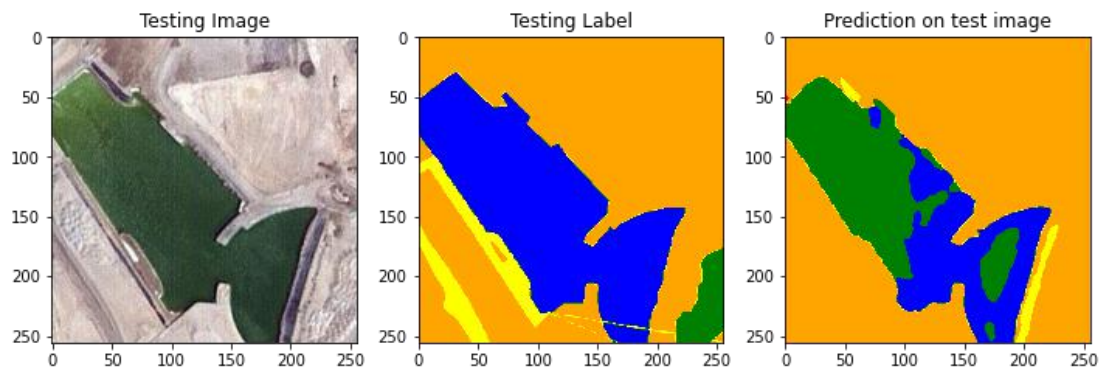
https://www.kaggle.com/code/ryanholbrook/dropout-and-batch-normalization/tutorial

Add block:

Epoch 60/60

loss: 0.3202 - accuracy: 0.8448 - jacard_coef: 0.7326 - val_loss: 0.3939 - val_accuracy: 0.8490 - val_jacard_coef: 0.7404

test_img_number = 0

test_img_number = 20