a

RGB image

20 m

Main-class classifier

Multi-stage LC prediction

E

C

OS NGD layer

E

H1b

C

C1

H1b

C4

E2a

C classifier
D classifier
E classifier

Post-processing
(e.g., C4 to C4a)

Predicted land cover

C1

H1b

C4a

E2a

b **U-Net architecture of classifiers**

RGB image

skip connection

LC prediction

pixels

channels

convolutional layers

c **Hierarchical land cover schema**

LC schema

D1a
D1b
D2b
D2d
D2
D1
C4c
C4b
C4a
C5
C4
D3
C2
C1
D6a
D6
C
I
D6b
D
H3b
D6c
E2a
E2
E
H3
H3a
E2b
F2
F
H
H2
H2b
F3
G
H1
H2a
F3a
G2
H1d
F3d
G2a
H1a H1b H1c
● Not estimated