CLAIMS

1. An encoding device comprising:

an index setting unit configured to set an index that represents information of a reference image and a weighting factor;

an index reconfiguring unit configured to predict a reference value of the weighting factor, wherein the reference value indicates a factor to be set if a difference of pixel value between a reference image and a target image to be encoded is less than or equal to a specific value; and

an entropy encoding unit configured to encode a difference value between the weighting factor and the reference value.

2. The device according to claim 1, wherein

the index represents a combination including the weighting factor and fixed point precision of the weighting factor, and

the index reconfiguring unit derives the reference value of the weighting factor based on the fixed point precision.

3. The device according to claim 1, further comprising

a predicted image generating unit configured to generate a predicted image of a target block by multiplying a predicted value by the weighting factor, the predicted value being compensated based on a motion vector; and

a quantization unit configured to generate a quantization transformation coefficient of the target block, wherein

the entropy encoding unit further encodes the quantization transformation coefficient and the motion vector.

4. The device according to claim 3, wherein

the index further includes an offset, and

the predicted image generating unit generates a predicted image of a target block by multiplying a predicted value by the weighting factor and adding the offset, the predicted value being compensated based on the motion vector.

5. The device according to claim 1, wherein

the index includes a weighting factor of luminance, first fixed point precision of the weighting factor of the luminance, a weighting factor of a color difference, and

second fixed point precision of the weighting factor of the color difference,

the index reconfiguring unit derives a first difference value between the first fixed point precision and the second fixed point precision, and

the entropy encoding unit encodes a second difference value between one of the first fixed point precision and the second fixed point precision and the first difference value.

6. The device according to claim 1, wherein

the index includes a weighting factor of a color difference and an offset of the color difference,

the index reconfiguring unit

multiplies a median value of a maximal brightness value of the color difference by the weighting factor of the color difference, and

derives a value acquired by subtraction of the median value of the color difference, and

the entropy encoding unit encodes a difference value between the offset of the color difference and the derived value.

7. A decoding device comprising:

an index reconfiguring unit configured to predict a reference value of a weighting factor, wherein the reference value indicates a factor to be set if a difference of pixel value between a reference image and a target image to be encoded is less than or equal to a specific value;

an entropy decoding unit configured to decode the weighting factor by adding a difference value acquired by decoding encoded data and the reference value; and

an index setting unit configured to set an index that represents information of the reference image and the decoded weighting factor.

8. The device according to claim 7, wherein

the index reconfiguring unit derives the reference value of the weighting factor based on fixed point precision of the weighting factor, and

the index represents a combination including the weighting factor and the fixed point precision of the weighting factor.

9. The device according to claim 7, wherein

the entropy decoding unit further decodes a quantization transformation coefficient and a motion vector by decoding the encoded data,

the device further comprising

a predicted image generating unit configured to generate a predicted image of a target block by multiplying a predicted value by the weighting factor, the predicted value being compensated based on the motion vector; and

an addition unit configured to generate an output image based on a decoded image and the predicted image.

10. The device according to claim 9, wherein

the index further includes an offset, and

the predicted image generating unit generates a predicted image of a target block by multiplying a predicted value by the weighting factor and adding the offset, the predicted value being compensated based on the motion vector.

11. The device according to claim 7, wherein

the index reconfiguring unit derives a first difference value between first fixed point precision of the weighting factor of luminance and second fixed point

precision of the weighting factor of a color difference, and

the entropy decoding unit

adds a second difference value of one of the first fixed point precision and the second fixed point precision acquired by decoding the encoded data and the first difference value, and

decodes one of the first fixed point precision and the second fixed point precision, and

the index includes the weighting factor of the luminance, the first fixed point precision, the weighting factor of the color difference, and the second fixed point precision.

12. The device according to claim 7, wherein

the index reconfiguring unit

multiplies a median value of a maximal brightness value of the color difference by a~~the~~ weighting factor of the color difference, and

derives a value acquired by subtraction of the median value of the color difference,

the entropy decoding unit

adds a difference value of an~~the~~ offset of the color difference acquired by decoding the encoded data and the value, and

decodes the offset of the color difference, and

the index includes the weighting factor of the color difference and the offset of the color difference.

13. An encoding method comprising:

setting an index that represents information of a reference image and a weighting factor;

predicting a reference value of the weighting factor, wherein the reference value indicates a factor to be set if a difference of pixel value between a reference image and a target image to be encoded is less than or equal to a specific value; and

encoding a difference value between the weighting factor and the reference value.

14. A decoding method comprising:

predicting a reference value of a weighting factor, wherein the reference value indicates a factor to be set if a difference of pixel value between a reference image and a target image to be encoded is less than or equal to a specific value;

decoding the weighting factor by adding a difference value acquired by decoding encoded data and the reference value; and

setting an index that represents information of the reference image and the decoded weighting factor.