

World flower market and roles of flowers in human Well-being

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International Market of Cut Flowers and Challenges
The 5th UU-A International Symposium

April 27, 2020

French-style Garden in UU campus
*Nation registered monument (1/15 in Kanto)

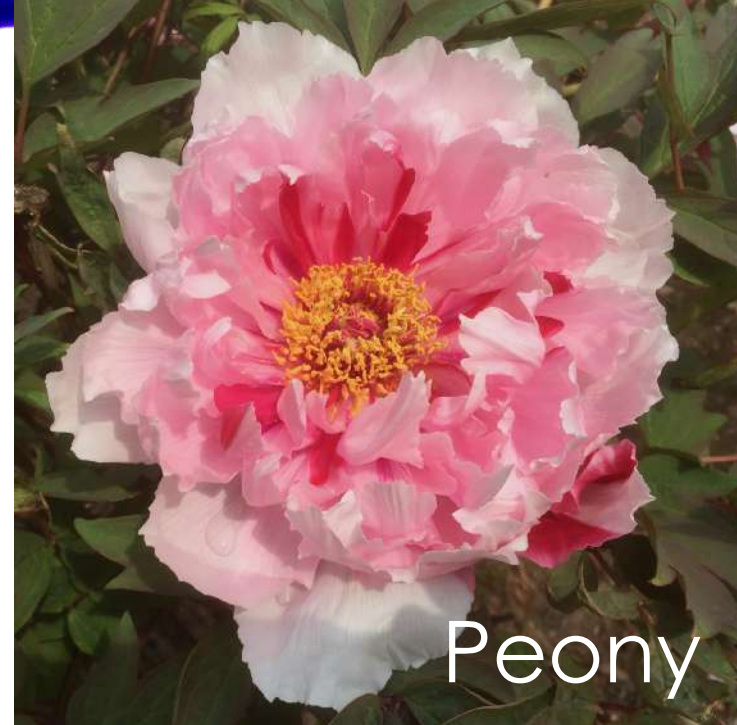




Azalea



Tulip



Peony



Iris japonica



Cyclamen

April 27, 2020



Sep 30, 2022



Fragrant orange-colored olive
Sweet olive



What are the flowers?



Flowers are
Reproductive organs of angiosperm



Touch-me-not

Hawkmoth

Nectar for insects

Pollinator for plants

Mutual coexistence



So, what do flowers mean to us?



Meaning of flowers to our Well-being

Beauty, Delight, Gratitude,
Sympathy, Love, Healing etc.



Wedding bouquet



Flowers and a picture of Her Majesty Queen Elizabeth II in front of the British Embassy in Tokyo (Photo by N. Sawada, Nikkei sports news)



Potted orchids
Election, Celebration, etc.



Traditional Flower
Arrangement (Ikebana)



Potted carnation for Mother's day

Be
flower
Be
mine ♥

Flower Valentine



世界でいちばん
花を贈る日。

Love

フラワーバレンタイン

2.14 FLOWER VALENTINE

THE DAY WHEN VALENTINE'S DAY PRESENTS FLOWER TO A LADY FROM MAN. LET'S TRY FLOWER VALENTINE.



花の国日本協議会
Flowering Japan Council



How do people response to flowers?

Ex. 1 : Researches on Response to flowers



Figure 1. Visual stimuli, white, red, and yellow rose flowers.

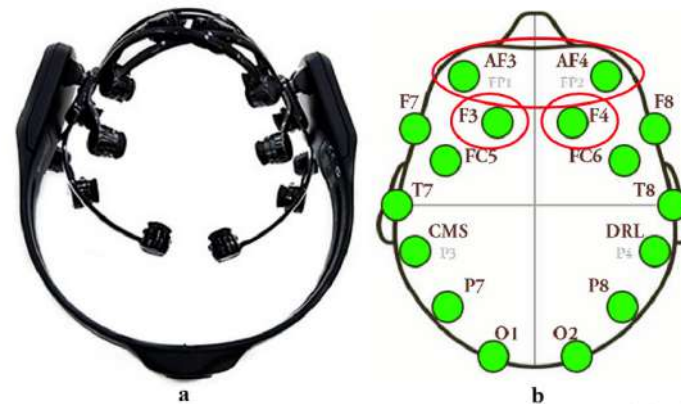


Figure 2. (a) EEG headset; (b) position of the electrodes.

XIE, Junfang; LIU, Binyi; ELSADEK, Mohamed. 2020. How Can Flowers and Their Colors Promote Individuals' Physiological and Psychological States during the COVID-19 Lockdown ? *Inter. J. Env. Res. Public Health*, 2021, 18.19: 10258.

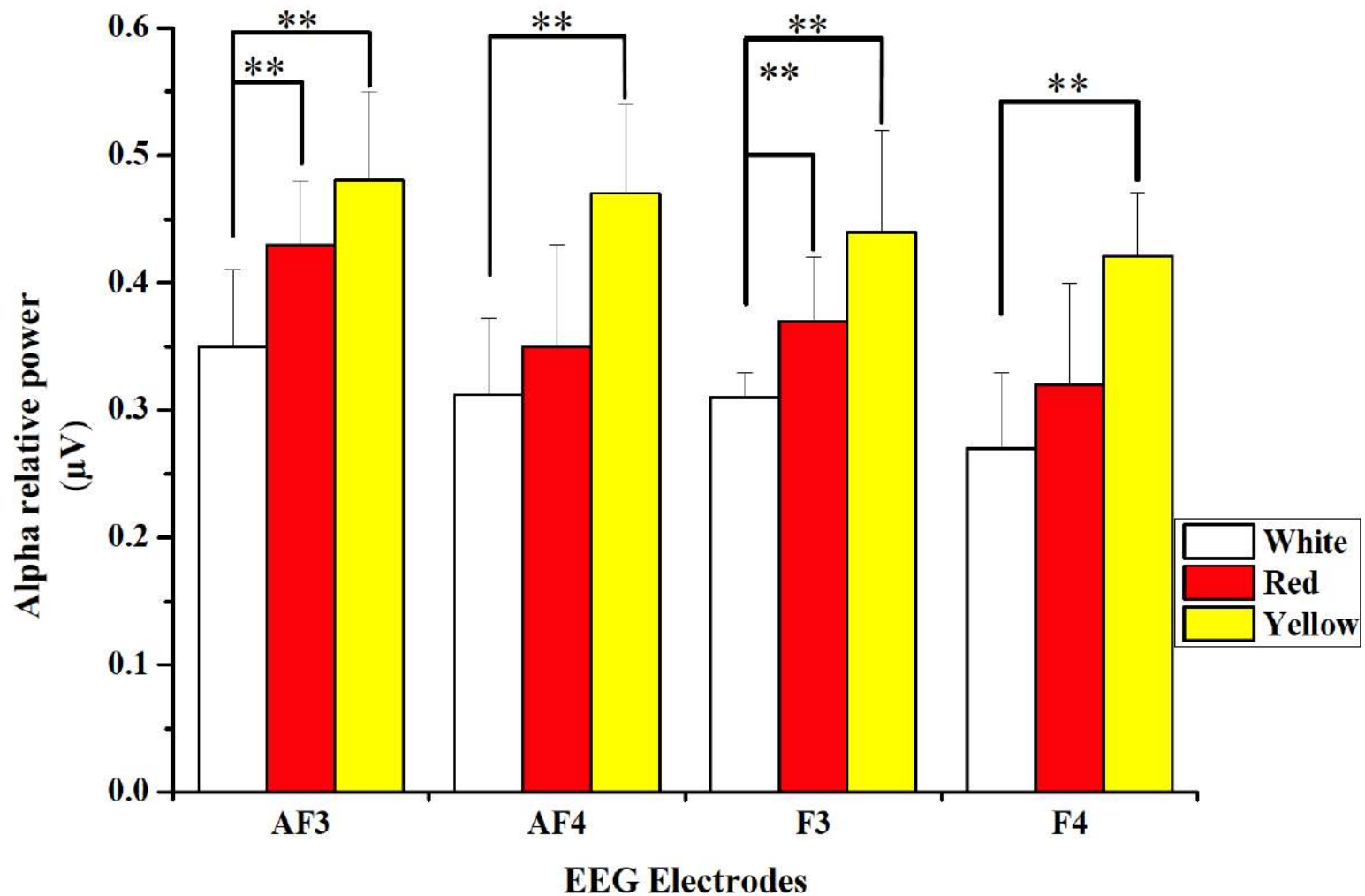
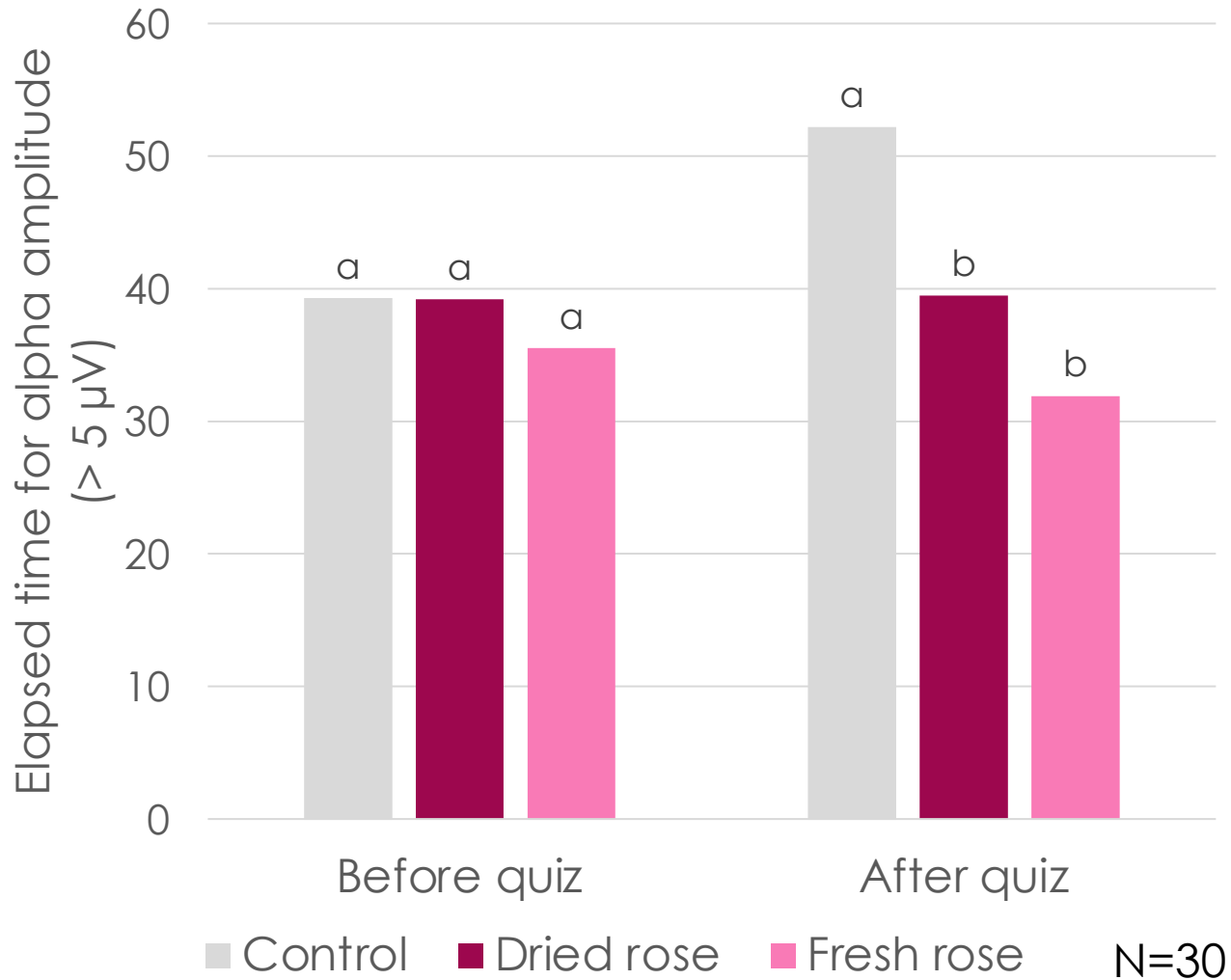


Figure 4. Alpha relative power variability in AF3, AF4, F3, and F4 electrodes while viewing white, red, and yellow flowers. ** $p < 0.01$ is defined by Bonferroni correction.

Ex. 2 : Does the existence of flowers promote stress recovery?



Rose
cv 'Serenob'



K. Yamane, S. Fukaya, N. Fujishige, K. Yoshino, M. Katagiri. 1999. Effects of cut flowers on physiological and psychological parameters of human being under stress. *Towards a new millennium in people-plant relationships*. 328-334.



Fresh and dry rose flowers could reduce stress by the quiz and stimulate feeling of relaxation.



Prof. Em. D. Relf
(Texas A&M Univ.)

Prof. Em. E. Matsuoka
(Kyushu Univ.)

山根 健治氏

2019.12. International joint-symposium in Tokyo
(Japan. Soc. People-Plant Relationships & Japan. Soc. Hort. Therapy)

Definition by Prof. Relf (2021)

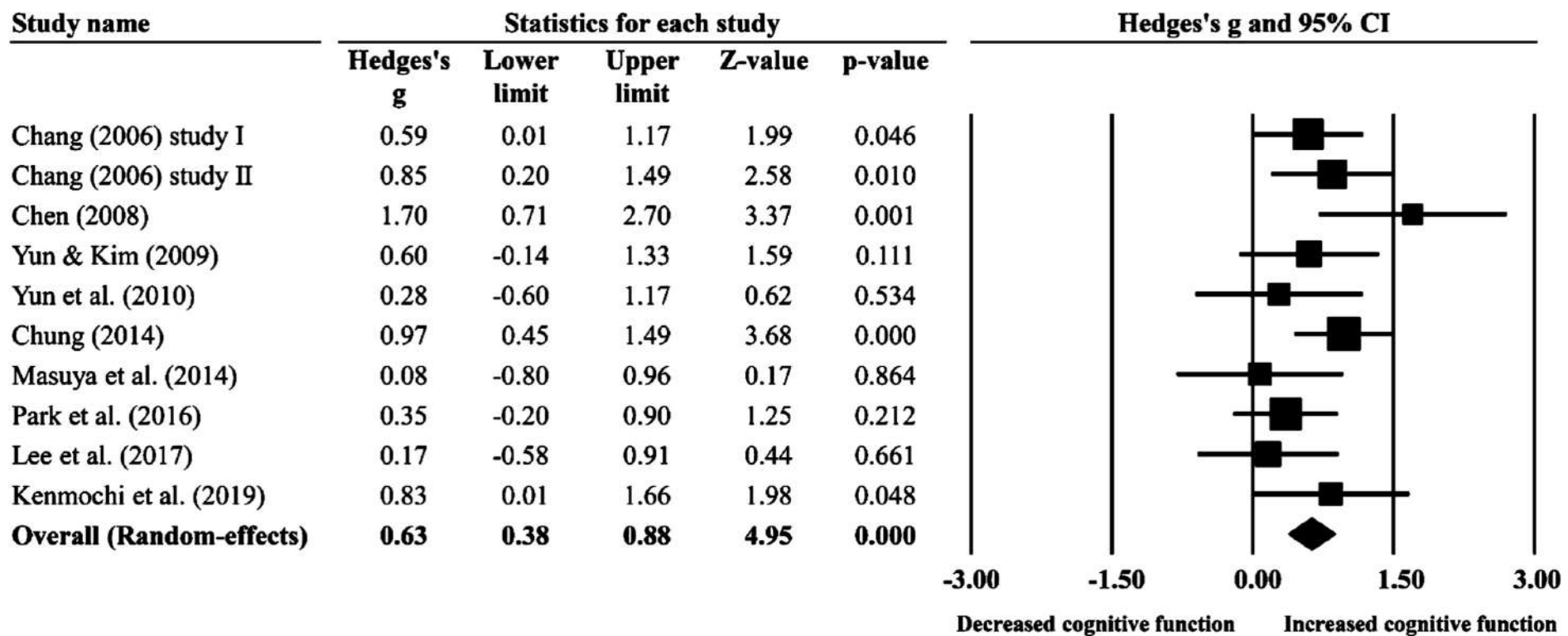
J. Japan. Soc. People-Plant Relationships 20(2).

Horticultural Therapy - as a profession, is the engagement of a person with diagnosed problems in a treatment program focused on the use of gardening and plant-based activities, facilitated by a qualified therapist trained in the use of horticulture, to achieve specific, measurable, therapeutic treatment goals.

Horticulture Well-being -

- ✓ For all citizens
- ✓ Enjoying the utility and benefits of horticulture and promoting human welfare (happiness)
- ✓ To lead the mind and body to a better state through gardening and to live a lively life.
- ✓ Gardening activities for stress relief and refreshment etc.

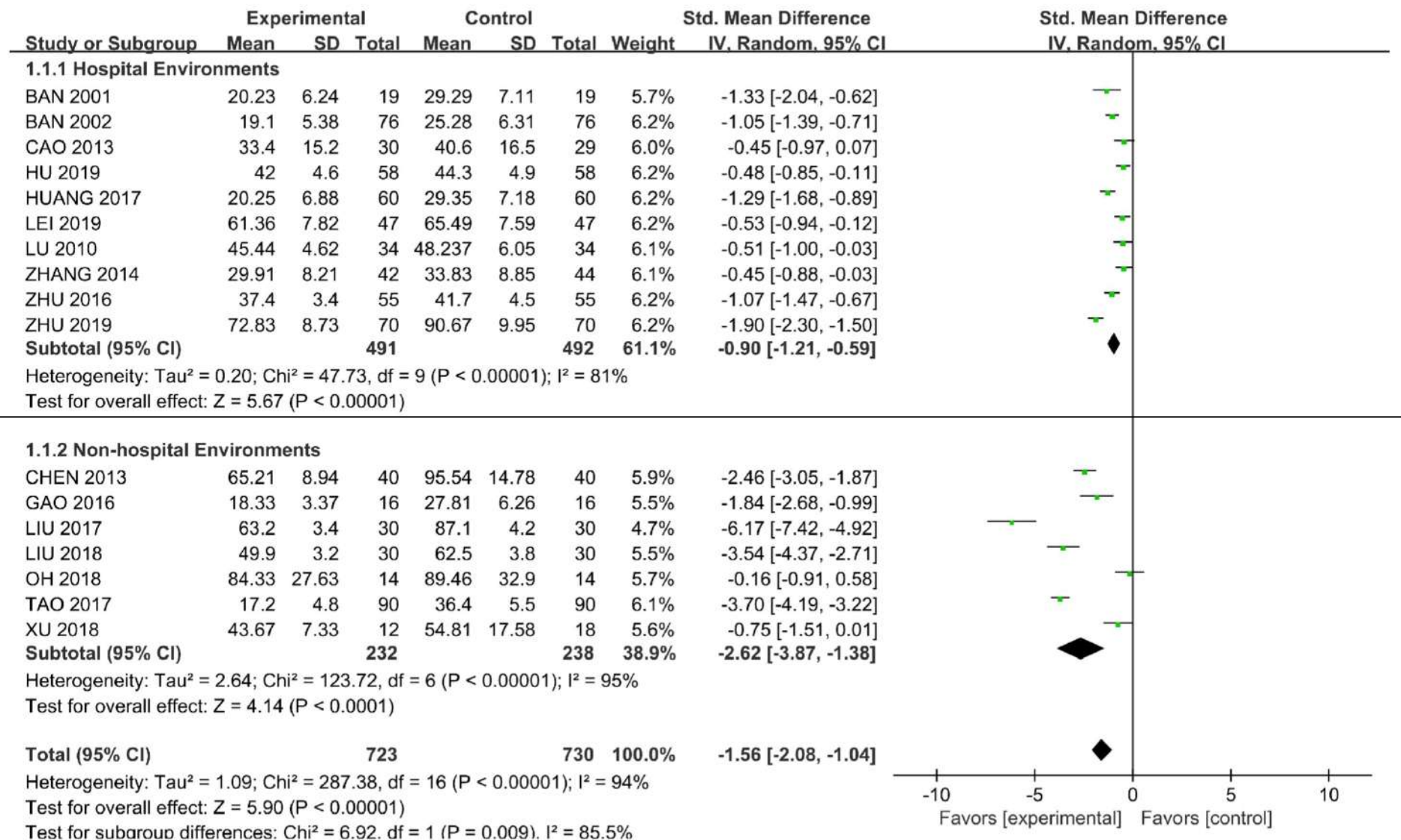
Ex. 3 : Effects of Horticultural therapy on Cognitive function



Tu et al. 2020. [Meta-analysis](#) of controlled trials testing horticultural therapy for the improvement of cognitive function. *Scientific reports*, 10.1: 1-10.

Ex. 4 : Effectiveness of Horticultural Therapy in People with Schizophrenia

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Lu, 2021. Effectiveness of Horticultural Therapy in People with Schizophrenia: A Systematic Review and Meta-Analysis. Int. J. Environ. Res. Public Health 2021, 18, 964.

WORLD FLOWER MARKET



Trade of Flower in the World



Trade flows of flower bulbs, cut flowers, cut foliage and other living plants (excluding intra-EU)



Flora Holland

30

8 - 10

8 - 11

13

9 - 1

9 - 2

9

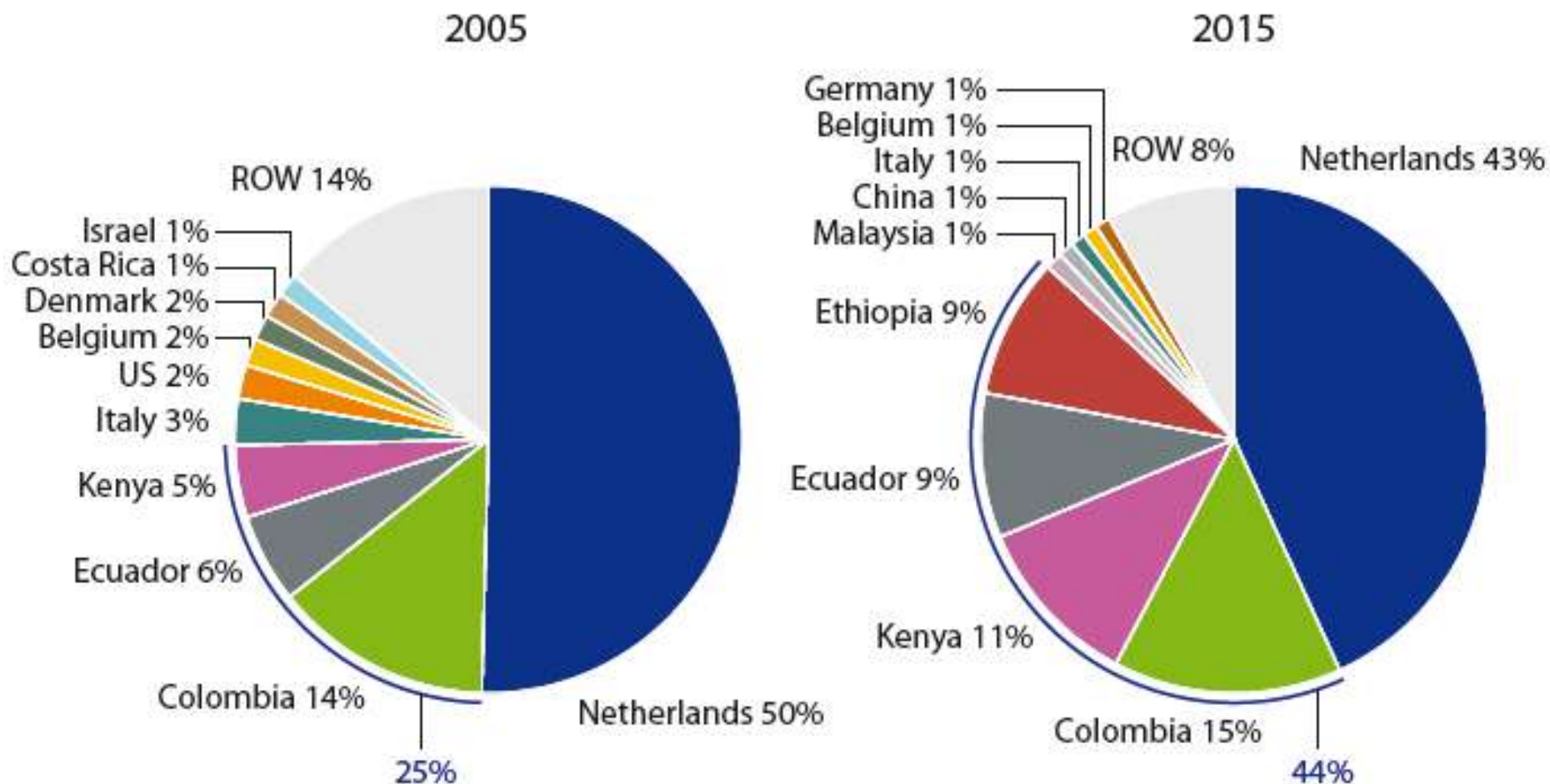






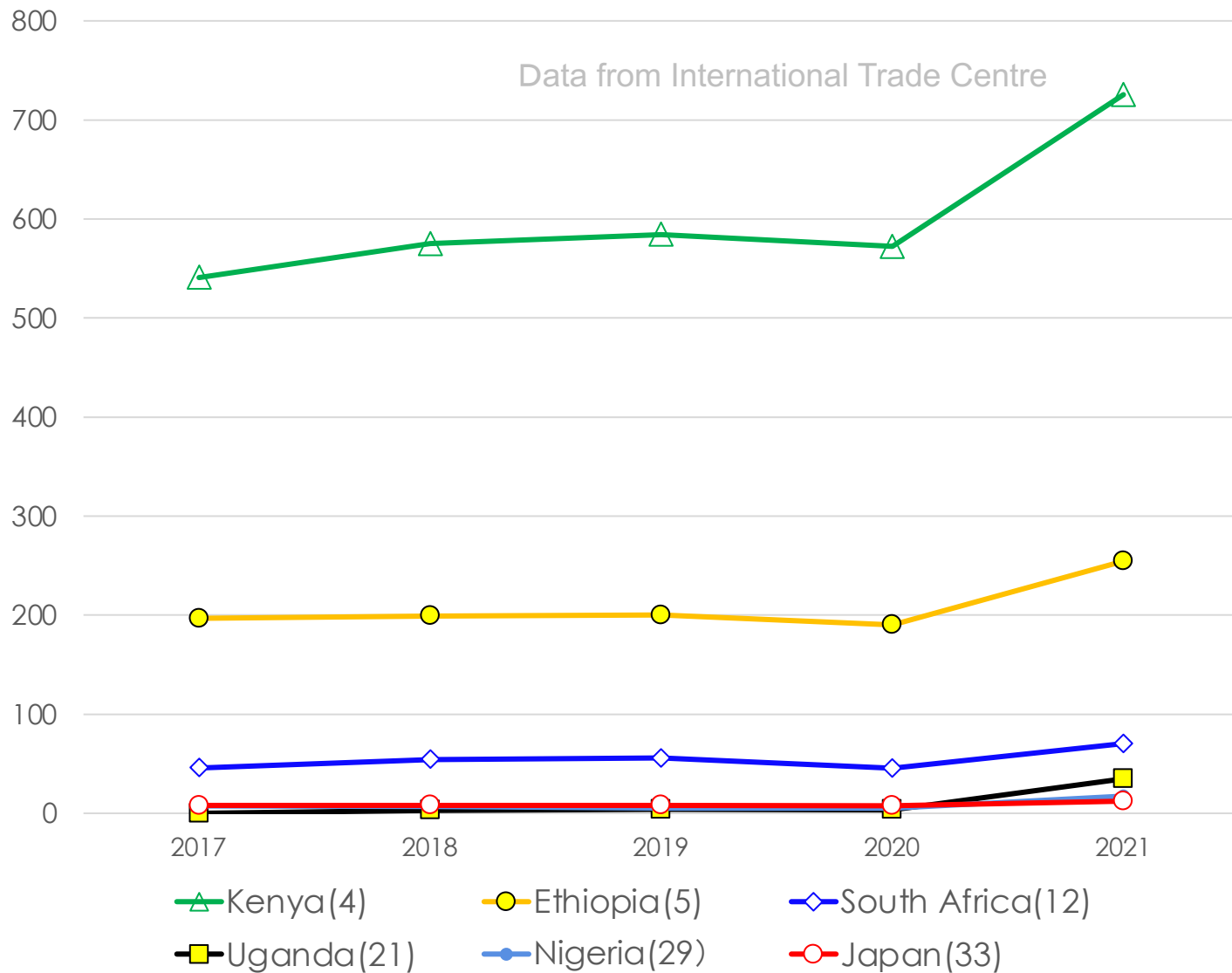






World's largest cut flower export countries, 2005 vs. 2015

Export of flowers: Value (US M\$)

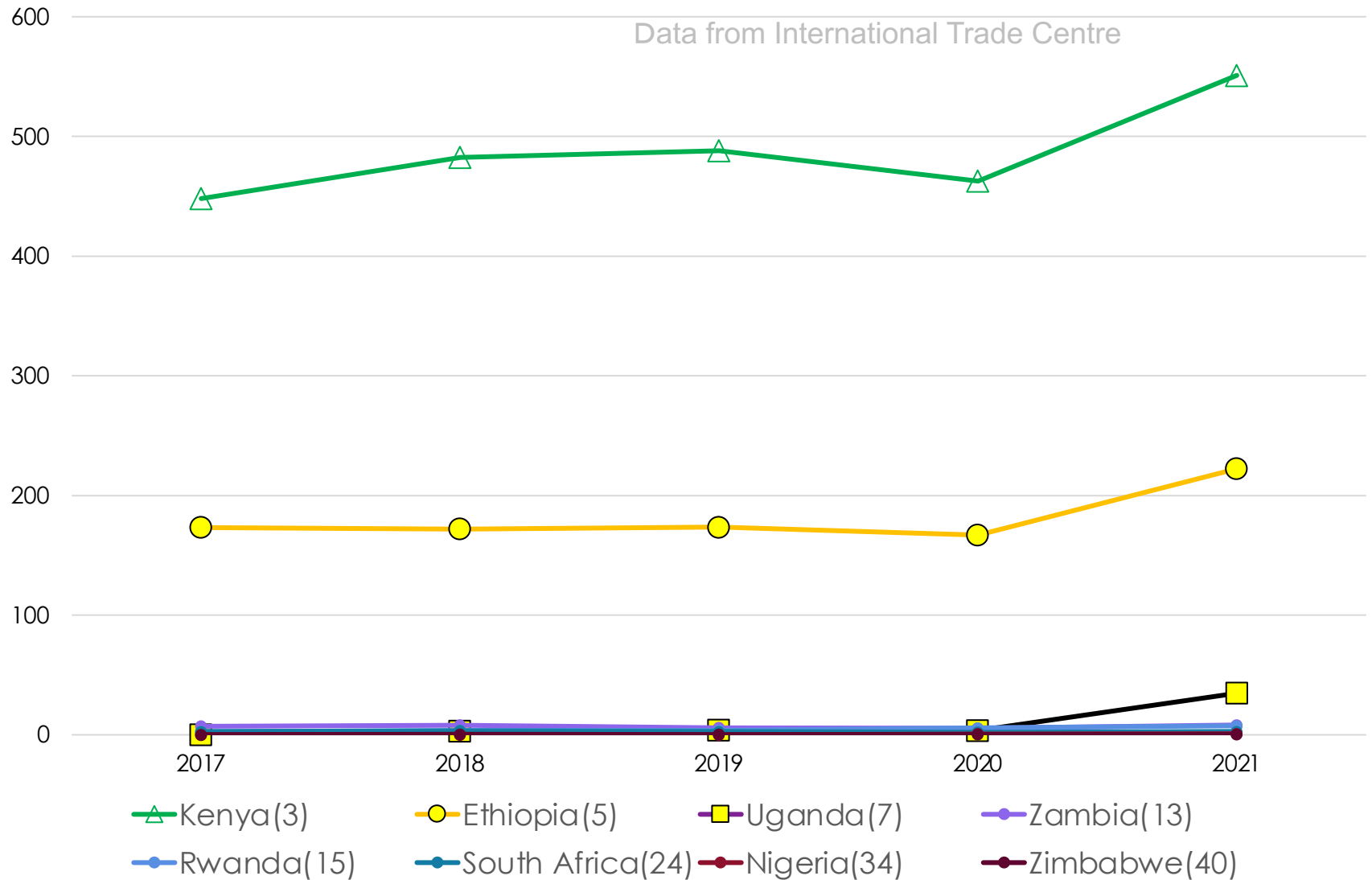




Avalanche (白)
Samurai 08 (赤)
(栃木農試 08 田邊氏より)

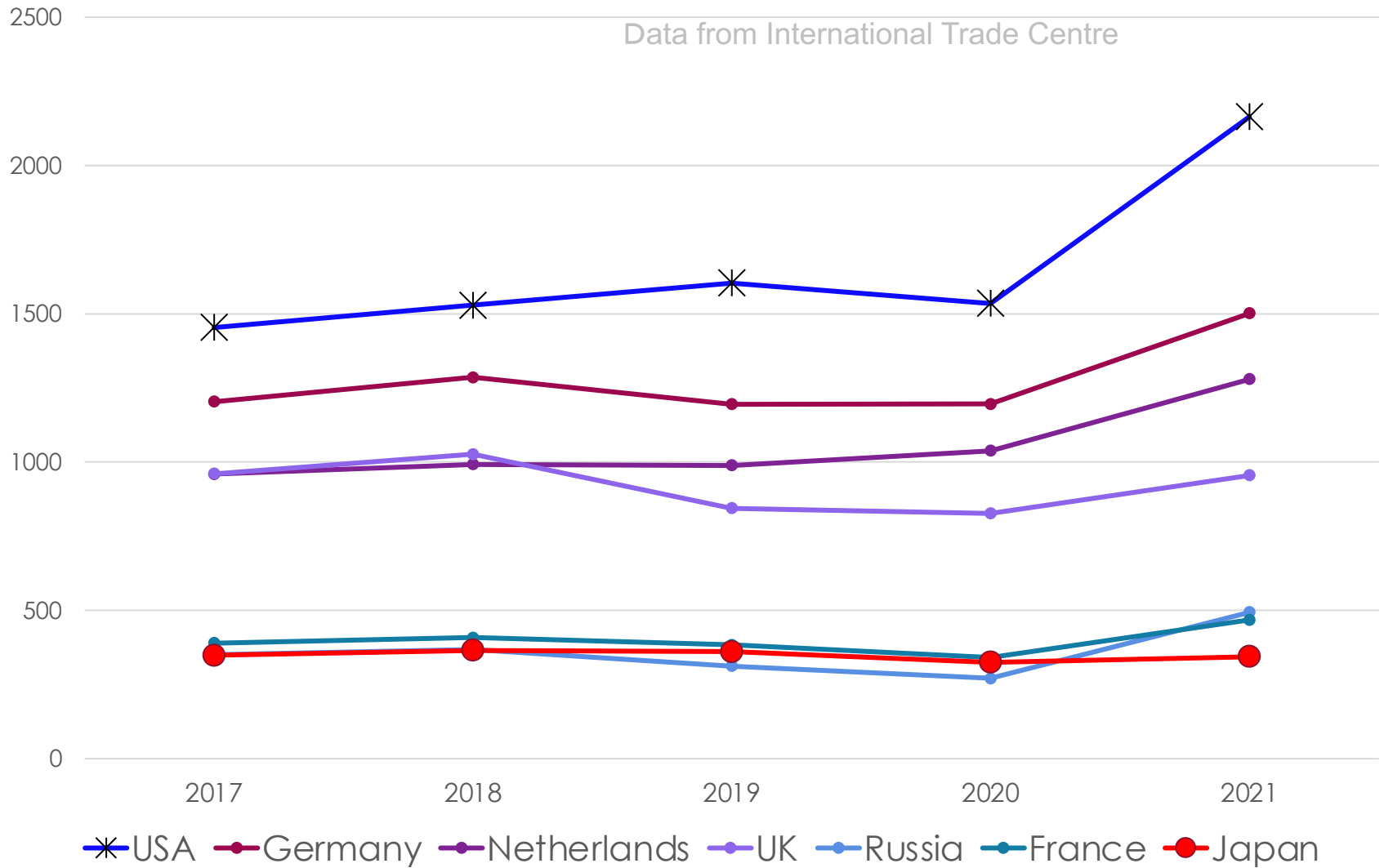
Export of roses: Value (US M\$)

Data from International Trade Centre




Import of flowers: Value (US M \$)

Data from International Trade Centre





What are the challenges of flower
production?

- 
- ✓ Quality, Longer vase life
 - ✓ Energy for transportation
 - ✓ Auction, Supermarket, E-commerce
 - ✓ Global warming
 - ✓ Sustainable production, ie. Water, fertilizer, pesticide
 - ✓ Well-being of workers
 - ✓ Lockdowns by Covid-19, War
 - ✓ Peaceful society #lovenotwar

2 ZERO
HUNGER



Goals

2

End hunger, achieve food security and improved nutrition and promote sustainable agriculture

3 GOOD HEALTH
AND WELL-BEING



Goals


3

Ensure healthy lives and promote well-being for all at all ages

12 RESPONSIBLE
CONSUMPTION
AND PRODUCTION



**ENSURE SUSTAINABLE CONSUMPTION
AND PRODUCTION PATTERNS**



Efforts to scientifically prove the benefits of flowers will continue. I am looking forward to the significance of the existence of flowers through meta-analysis or new parameters.

The movement to utilize gardening and flowers for welfare is expanding all over the world.

Hoping that African flowers will
promote well-being of people
and peace of the world.



Thank you,

