Appropriate Diet for All

Cross-country evaluation of nutrition outcomes

Abstract

The *Global Programme Food and Nutrition Security, Enhanced Resilience* is implemented in intervention areas in 12 countries under the *Special Initiative ONE WORLD – No Hunger (SEWOH)* of the German Federal Ministry for Economic Cooperation and Development (BMZ). Its objective is to improve the nutritional situation for women of reproductive age and children 6–23 months of age. In 2018/19, surveys in eight countries measured the progress that has been made through a multi-sectoral nutrition-sensitive approach in the different country contexts towards food and nutrition security outcomes (dietary diversity, household food security) as compared to baseline data (2015/16). A standardised methodology was applied with internationally validated indicators. Women's Dietary Diversity (IDDS-W / MDD-W) and the Minimum Acceptable Diet of small children (MAD) are the proxy indicators for diet quality. The Household Food Insecurity Experience Scale (HFIES) was used as a proxy for access to food and to provide information on the resilience of a household to food crises.

In addition, the situation of beneficiaries of project activities was compared to control groups in order to verify whether positive changes could be attributed to project interventions. The results show significant improvements in the diet quality of women and children (MDD-W and MAD) and in household food security for most of the survey participants. Moreover, beneficiaries experienced a significantly improved dietary diversity among women and children, as well as better access to food, than in the control group.

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Objectives of the Global Programme (2015-2023)

- Improve dietary diversity for women of reproductive age and for children 6-23 months
- Improve resilience to food and nutrition crises
- Promote nutrition governance within the countries

Intervention areas of the Global Programme in

Benin, Burkina Faso, Cambodia, Ethiopia, India, Kenia, Malawi, Mali, Madagascar, Togo, Yemen, Zambia

Background and objectives

The *Special Initiative* ONE WORLD – *No Hunger (SEWOH)* of the German Federal Ministry for Economic Cooperation and Development (BMZ) aims at eradicating hunger and malnutrition and contributes significantly to Germany's Nutrition for Growth Summit commitments in 2013 as well as the targets of the 2030 Agenda (SDG2). Since 2015, the *Global Programme Food and Nutrition Security, Enhanced Resilience* has focussed on improving food and nutrition security for women and children through a multisectoral and multilevel approach (micro, meso, macro) in 12 countries (see Box page 2).

One characteristic of the Global Programme is a standardised M&E framework for regular outcome and output monitoring. Diversity of production and purchase, storage and conservation practices, nutritional knowledge as well as care and hygiene practices are regularly assessed, since they are key determinants of adequate diet quality. To measure changes in dietary diversity and household food security (outcome level), internationally validated indicators (see Box page 3) are applied. Dietary diversity (MDD-W) is a scientifically proven proxy indicator for diet quality and reflects the micro-nutrient adequacy of women's diets – a key determinant of food and nutrition security.

The Household Food Insecurity Experience Scale (HFIES), as a proxy indicator for access to food, provides information on the resilience of a household to food crises.

This policy brief presents the main findings of a follow-up survey (FUS) that was carried out in eight of 12 countries, two to three years after the start of interventions. Data from baseline surveys in 2015/2016 were compared with the results from follow-up surveys, conducted within groups of beneficiaries and non-beneficiaries in 2018/19.

The **survey objective** was to assess the progress that has been made through a multisectoral nutrition-sensitive approach in the different country contexts towards food and nutrition security outcomes (dietary diversity, household food security) and to identify the most effective determinants (outputs and influencing factors) for the programme objective.

Standardised outcome indicators for monitoring and accountability

- Individual Dietary Diversity Score – Women (IDDS-W)
- Minimum Dietary Diversity for Women (MDD-W)
- Minimum Acceptable Diet for children 6-23 months (MAD)
- Household Food Insecurity Experience Scale (HFIES)

Methodology and study design

Methodology
Quantitative and qualitative data collection with a cross-country standardised but locally-adapted questionnaire based on FAO/WHO guidelines

Elements of the questionnaire
- Open 24-h recall of women's and infants' food consumption (IDDS/MDD-W and MAD)
- Socio-economic basic data and access to food (HFIES) of the household
- Knowledge and use of relevant hygiene and nutrition practices
- Participation in programme interventions (various range of activities and frequency)
- Country- and intervention-specific questions on underlying causes of malnutrition

Sampling size and procedures
2-stage cluster sampling of 400 mothers with children under 2 years of age per project region/county, which provided representative data for a) the project region (baselines 2015/16) and b) beneficiaries of the programme (200 interviews) as well as for control groups (200 interviews) from the same area with similar framework conditions (FUS 2018/19 ff.)

Timing: Baseline and follow-up surveys conducted during the same season of the year, 3-5 months after the main harvest

Data collection: Mixed (m/f) pairs of enumerators, tablet-based data entry (with ODK), daily data transmission and cleansing by supervisor

Statistical analysis: Descriptive analysis per country and cross-country determinant analysis (ongoing) through SPSS software

Focus group discussions: Measure for gaining a better understanding of the survey results and their underlying causes

Main findings of the eight follow-up surveys 2018-2019

- The project interventions have a positive impact on the diet quality and household food security of beneficiaries (comparison between baseline and follow-up survey).

- Participation in a higher number of project interventions is associated with a better nutritional situation (diet quality and household food security).

- Ongoing cross-country analysis[1] of the survey results indicates that beneficiaries are more likely to experience better dietary diversity and access to food than a non-beneficiary from the control group (statistically significant).

- Taken together, this implies that the results achieved can be attributed to the interventions. The multi-sectoral nutrition sensitive approach of the programme is effective!

- For the relatively newly-introduced indicator MDD-W, the results show that it is suitable for measuring the impact of such projects. So far, it has been used and validated to measure nutritional status, but has not yet been measured in a time series on this scale.

[1] The Leipniz Centre for Agricultural Landscape Research (ZALF) is currently doing a more in-depth cross-country analysis of FUS data.

Summary of main indicators

Changes between baseline (2015/16) and follow-up surveys (2018/19)

	Benin	Burkina Faso	Cambodia	Ethiopia	Malawi	Mali	Togo	Zambia
IDDS-W	improved	deteriorated; not significant	deteriorated	improved	improved	improved; not significant	improved	improved
MDD-W	improved	deteriorated; not significant	deteriorated	improved	improved	improved; not significant	improved	improved
MAD	improved	deteriorated; not significant	deteriorated; not significant	improved	improved	improved; not significant	improved	improved
HFIES	deteriorated	improved; not significant	improved	deteriorated; not significant	improved	improved	improved	improved

improved · improved; not significant · deteriorated · deteriorated; not significant

Summary of main indicators

Differences between beneficiaries and control groups 2018/19

	Benin	Burkina Faso	Cambodia	Ethiopia	Malawi	Mali	Togo	Zambia
IDDS-W	better off	better off	worse; not significant	not applicable	better off	better off; not significant	better off	better off
MDD-W	better off	better off	better off; not significant	not applicable	better off	better off; not significant	better off	better off
MAD	better off	better off	better off	not applicable	better off	better off; not significant	better off; not significant	better off
HFIES	better off; not significant	better off; not significant	worse; not significant	not applicable	better off; not significant	better off; not significant	better off	better off

better off · better off; not significant · worse · worse; not significant

Survey results by indicator

IDDS-W and MDD-W

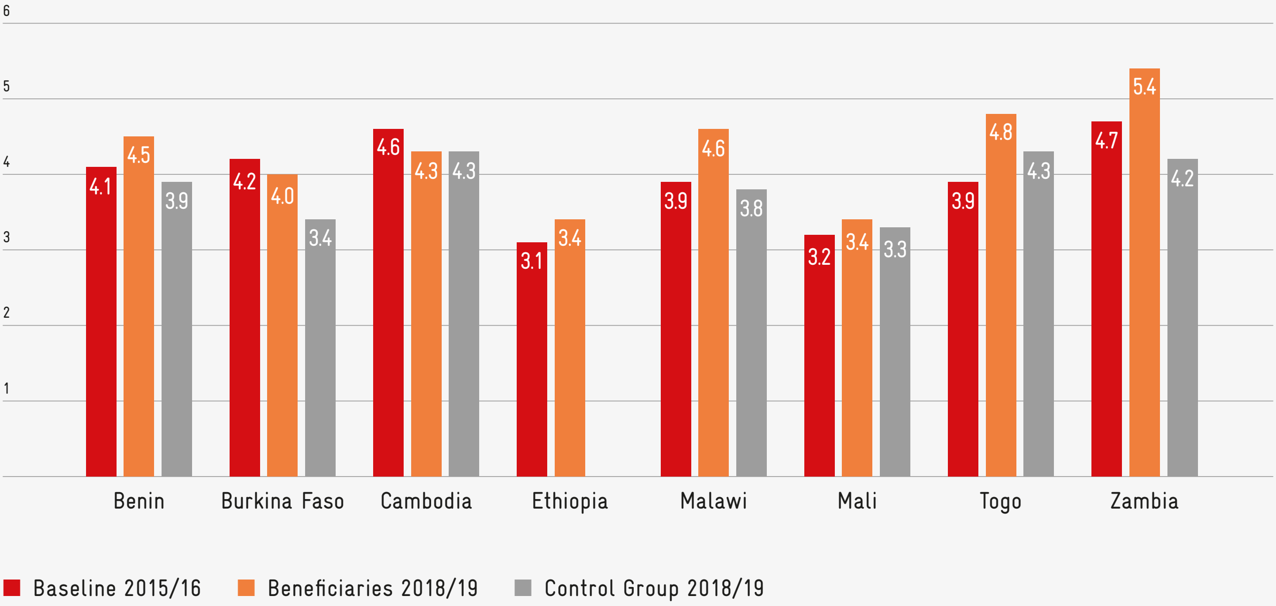
The following graphics show the average of the individual dietary scores for women (IDDS-W) as a comparison between baseline and follow-up surveys, both for direct beneficiaries and control groups. Results for MDD-W are also presented. This is a dichotomous indicator defined as the proportion of women (15-49 years of age) who consumed food items from at least five out of ten defined food groups the day and night prior to the survey. The indicator MDD-W reflects the micronutrient adequacy of the women's diets.

The means of women's dietary diversity (IDDS-W) have significantly improved over time in five out of eight countries (Benin, Ethiopia, Malawi, Togo, and Zambia). In addition, beneficiary women are significantly better off as compared to non-beneficiaries (control groups) in five out of seven countries (Benin, Burkina Faso, Malawi, Togo, and Zambia), which allows attribution of the improvement to the project interventions. Burkina Faso shows a slightly deteriorated overall dietary diversity of beneficiary women. However, the project interventions obviously protected women from more significant downturns, as the dietary diversity in the control group declined even more. An in-depth analysis of the results from Cambodia is still ongoing.

The percentages of women who showed adequate diet quality (consuming at least five out of ten food groups, MDD-W), increased significantly in five out of eight countries as compared to the baseline data. Comparing beneficiaries to the control groups, MDD-W increased in all countries with data available, but this is only statistically significant in Benin, Burkina Faso, Malawi, Togo, and Zambia.

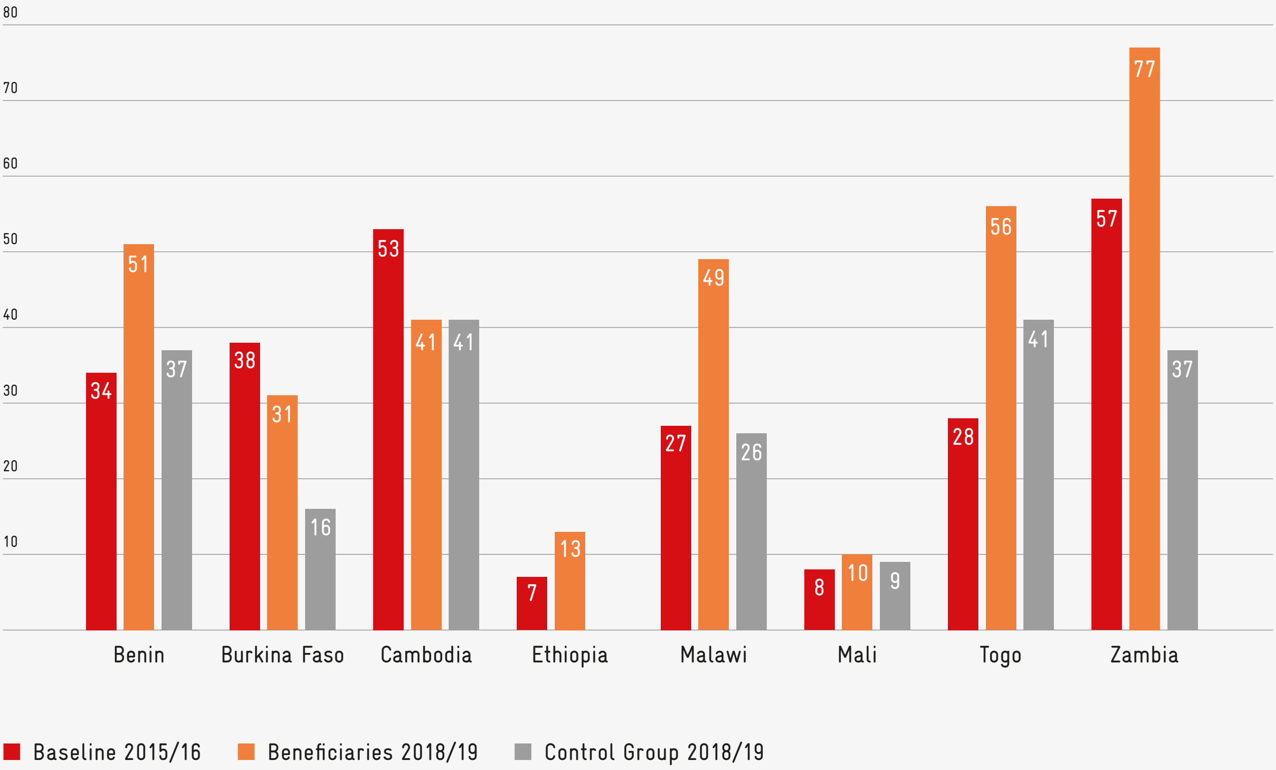
Individual Dietary Diversity Score for Women (IDDS-W)

in food groups



Proportion of women reaching Minimum Dietary Diversity (MDD-W)

in percent



Minimim Acceptable Diet for children (MAD)

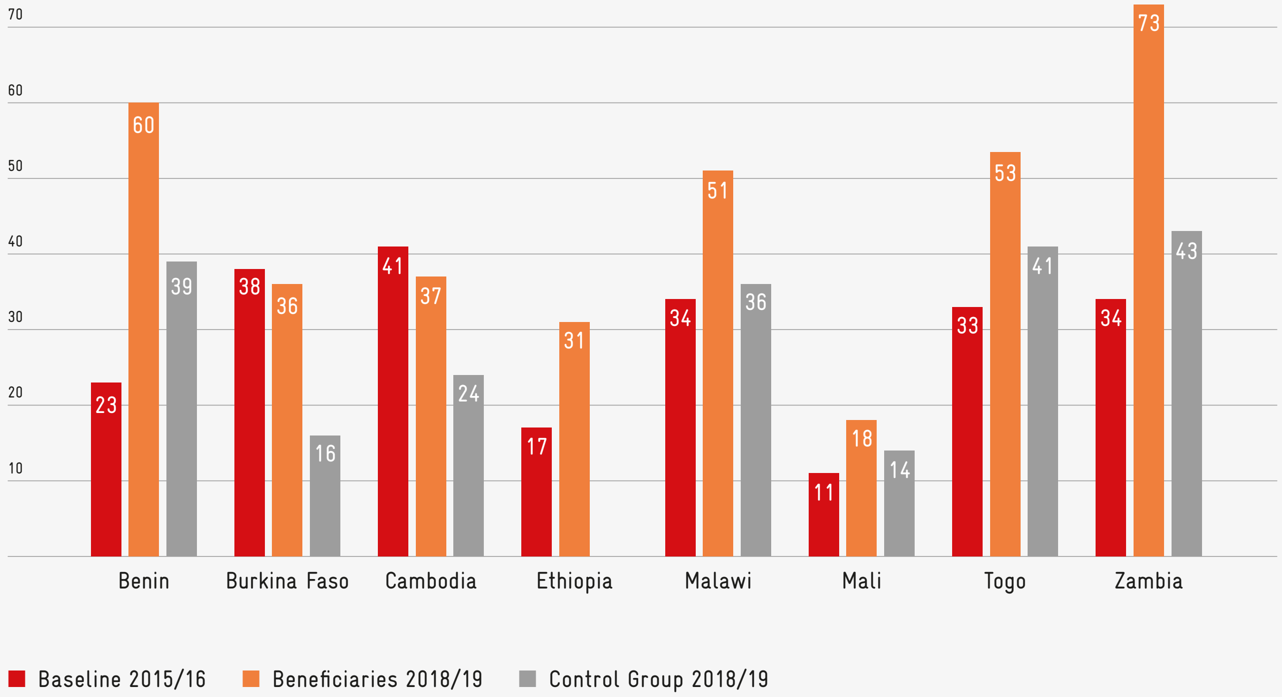
This indicator shows whether children receive sufficient food in adequate diversity and is a proxy for the diet quality of children under the age of two. It combines a dietary diversity pattern (at least four out of seven defined food groups for children) and adequate meal frequency per age group for children between 6-23 months of age.

In all countries, with the exception of Burkina Faso and Cambodia, the proportion of children receiving proper nutrition (MAD) increased between the baseline and follow-up surveys. These improvements are significant in five out of eight countries (Benin, Ethiopia, Malawi, Togo, and Zambia). Comparing direct beneficiaries and control groups, in all countries, beneficiary children are better off than non-beneficiaries, although not significantly so in Mali and Togo. However, it again allows an attribution of the positive impact to the applied project interventions.

The high amplitude of change indicates that MAD is responding to better nutrition knowledge and behaviour of the mothers. Children in beneficiary villages in all countries are reported to be better fed than children in control villages. Data from Burkina Faso shows that interventions kept beneficiaries at 2016 levels, protecting children against a negative trend that has been found within the control group. Data from Zambia illustrates that not all improvements in 2018 can be credited to project interventions only, as the dietary diversity of the control groups improved as well.

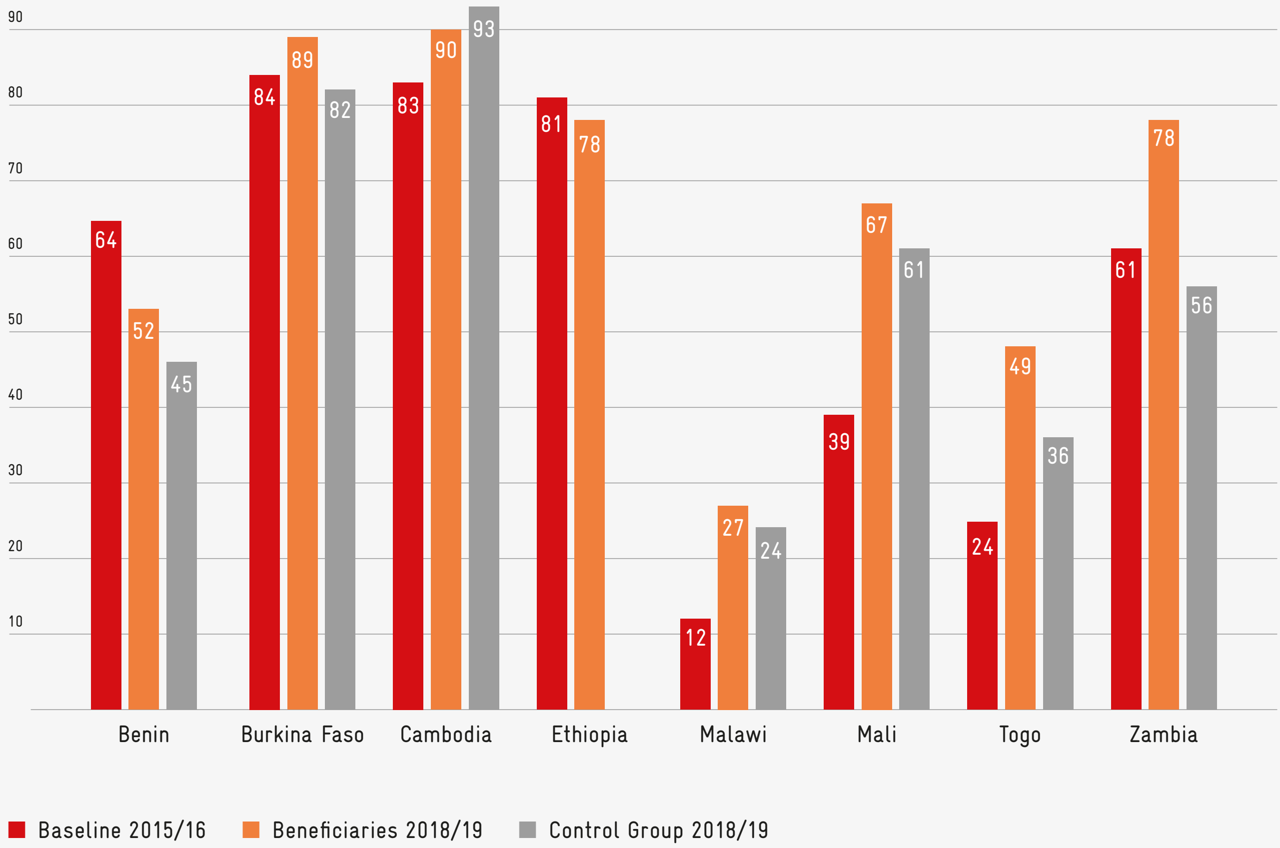
Proportion of children reaching Minimum Acceptable Diet (MAD)

in percent



Portion of food-secure and mildly food-insecure households (HFIES)

in percent



Results of the Food Insecurity Experience Scale at household level (HFIES)

In Mali the programme is focussed on food security, therefore HFIES as a proxy for access to food is one of the outcome indicators. However, HFIES is assessed and monitored in all countries.

The share of people who are food secure or only mildly food insecure according to HFIES has significantly increased in five out of eight countries (Cambodia, Malawi, Mali, Togo, and Zambia). In all seven countries with data available, beneficiaries are better off than non-beneficiaries (significantly in Togo and Zambia).

Conclusions

- The impact hypothesis of the project was substantiated. In most of the countries, both diet quality and household food security (as measured through the selected indicators) improved in nearly all dimensions.
- Integrated programme approaches with specific targeting and intensive activities at household level have a high probability of improving diet quality of women and children.
- A success factor for improving diet quality and household food security is participation in activities that address issues of various nutrition-relevant sectors and fields (e.g. diversity of production and purchase, storage and conservation practices, nutritional knowledge as well as care and hygiene practices).
- The positive results of the follow-up survey and the standardised methodology should be widely shared at policy and strategy levels (country nutrition platforms, SUN networks or other high-level meetings) in order to contribute to the discussions on improved nutrition governance.
- However, there is no linear improvement in dietary quality over time. It can easily change, depending on seasonality, annual differences in weather conditions, and developments of other food and nutrition security conditions. These can hardly be influenced by the programme itself, but need to be monitored continuously to be able to adjust the programme strategy and activities accordingly.
- In addition, there is a risk of losing the improvements already achieved if interventions are not continued or are institutionalised. Hence, of equal importance are measures such as documentation and dissemination of promising practices, institutionalisation of capacity development approaches, strengthening of multisectoral coordination bodies, as well as improvement of nutrition monitoring and planning activities in order to ensure sustainable impact.
- Internationally recommended standard indicators (e.g. IDDS-W, MDD-W, MAD and HFIES) should be mainstreamed in German development cooperation as they are validated, comparable and suitable for measuring the effectiveness of nutrition interventions.

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Registered offices
Bonn and Eschborn

Friedrich-Ebert-Allee 38+40
53113 Bonn, Germany
T +49 228 44 60-0
F +49 228 44 60-17 66

E info@giz.de
I www.giz.de

Name of the programme:
Global Programme Food and Nutrition Security,
Enhanced Resilience

Authors:
Dr Claudia Trentmann (comit GmbH, Berlin)
Dr Lioba Weingärtner (consultant, Rottenburg)

Responsible:
Claudia Lormann-Nsengiyumva, GIZ
nutritionsecurity@giz.de

Edited by:
Markolf Maczek, GIZ
Dr. Ines Reinhard, GIZ

Design:
kippconcept gmbh, Bonn

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GIZ: Shilpi Saxena S. 1; Chancy Alfred Nthowela S. 3; Angelika Jakob S. 6;
Klaus Wohlmann S. 2, S. 9;

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