Child Protection Index Computation Methodology

1. Approach:

A composite index helps to group a number of indicators falling under different dimensions in a standardized way. It is a useful statistical measure to assess overall performance of a region over a period of time. A total of 33 indicators that fall under three broad dimensions were used to calculate the overall composite index. The three broad dimensions are:

 i. Results for Children
 ii. Human Resource
 iii. ICPS Structure and Functionality

List of indicators for each of the dimensions are provided in Annexure-I.

All the districts' relative positions are identified under four indices that are computed from the data available for the 33 indicators. The four indices are:

 i. Index - Results for Children
 ii. Index - Human Resource
 iii. Index - ICPS Structure and Functionality
 iv. Index – Overall

2. Methodology for computing index:

The identified indicators used for computation of index might be either positive or negative. The indicators that are positively associated with child protection are considered as positive indicators and the ones that are negatively associated are considered as negative indicators. Before computing the four indices, it is required to calculate the index value for individual indicator for each district. The index value is calculated on the basis of nature of the indicator, i.e. positive indicator or negative indicator.

2.a. Positive Indicator

Let X_{id} represent the value of the ith indicator in the dth district of a state (i = 1,2,3,…..30 ; d = 1,2,3,…..27). Index has been calculated for 27 districts in Assam.

If an indicator X_i is positively associated with child protection, like Percentage of children (children in need of care and protection or children in conflict with law) for whom Individual Care Plan exists, index is computed using the following formula:

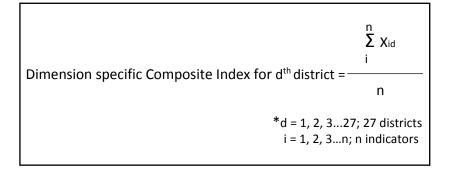$$Index\ Value\ X_{id} = \frac{X_{id} - Min(X_{id})}{Max(X_{id}) - Min(X_{id})}$$

2.b. Negative Indicator

If an indicator X_i is negatively associated with child protection, like children (children in conflict with law) whose cases are pending for more than 90 days, index is computed using the following formula:

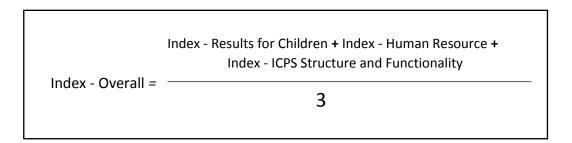$$\text{Index Value } X_{id} = \frac{Max(X_{id}) - X_{id}}{Max(X_{id}) - Min(X_{id})}$$

Where Min (X_{id}) and Max (X_{id}) are, respectively, the minimum and maximum of (X_{i1}, X_{i2}, X_{i3}….. X_{in}) for that particular indicator across districts in a State.

The normalized index values of each of the n indicators for a district are then combined by using simple average to arrive at dimension specific composite index for each districts as follows:

$$\text{Dimension specific Composite Index for d}^{th}\text{ district} = \frac{\sum_{i}^{n} X_{id}}{n}$$

$$*d = 1, 2, 3...27; 27 \text{ districts}$$
$$i = 1, 2, 3…n; n \text{ indicators}$$

In the above formula "n" as number of indicators varies for all the districts for the three dimensions. E.g., In Human Resource dimension there are 14 indicators, Results for Children has 9 indicators and ICPS Structure and Functionality has 10 indicators.

To calculate the overall composite index across three dimensions, the following formula is referred:

$$\text{Index - Overall} = \frac{\text{Index - Results for Children} + \text{Index - Human Resource} + \text{Index - ICPS Structure and Functionality}}{3}$$

Equal weightage is given to all the index values while calculating the composite index. Composite index ranges from 0 to 1. Values nearing to 0 implies poor performance while values nearing to 1 implies better performance.

Annexure - I

List of Indicators used in computing index

Composite Indicators	Sl. No.	Indicators ("i")
Index - Results for Children	1	Percentage of children (CICL) for whom ICP exists
	2	Percentage of children (CNCP) covered in After Care Programme
	3	Percentage of children (CICL) for whom Social Investigation Report (SIR) is submitted
	4	Percentage of children declared legally free for adoption
	5	Percentage of children who were adopted
	6	Percentage of children (CNCP) for whom ICP exists
	7	Percentage of children (CNCP) for whom Social Investigation Report (SIR) is submitted
	8	Percentage of children (CICL) cases pending for more than 90 days
	9	Percentage of children (CNCP) cases pending for more than 90 days
Index - Human Resource	10	Percentage of CWCs with all sanctioned posts filled (One Chair and four members)
	11	Percentage of female members in CWC
	12	Percentage of JJBs with all sanctioned posts filled (One Chair and two members)
	13	Percentage of female members in JJB
	14	Percentage of SJPUs with all sanctioned posts filled (One Chair and two members)
	15	Percentage of female members in SJPU
	16	Percentage of DCPUs with all sanctioned posts filled (15 Number of staffs)
	17	Percentage of police Stations with at least one CWPO
	18	Percentage of female CWPOs available in police stations
	19	Percentage of CCIs that have received training
	20	Percentage of members in CWC who received training in last quarter
	21	Percentage of members in JJB who received training in last quarter
	22	Percentage of members in SJPU who received training in last quarter
	23	Percentage of members in DCPU who received training in last quarter
Index - ICPS Structure and Functionality	24	Percentage of District Child Protection Committee (DCPC) set up
	25	Percentage of Block Child Protection Committee (BCPC) set up
	26	Percentage of sitting held by CWC
	27	Percentage of sitting held by JJB
	28	Percentage of CNCP cases resolved by CWC
	29	Percentage of CICL cases resolved by JJB
	30	Percentage of CWCs who submitted Monthly Report (MR) before DCPO
	31	Percentage of JJBs who submitted Monthly Report (MR) before DCPO
	32	Percentage of CCIs who submitted Monthly Report (MR) before DCPO
	33	Percentage of CCIs registered under JJ Act provision
Index-Overall		Comprises of all the three dimensions